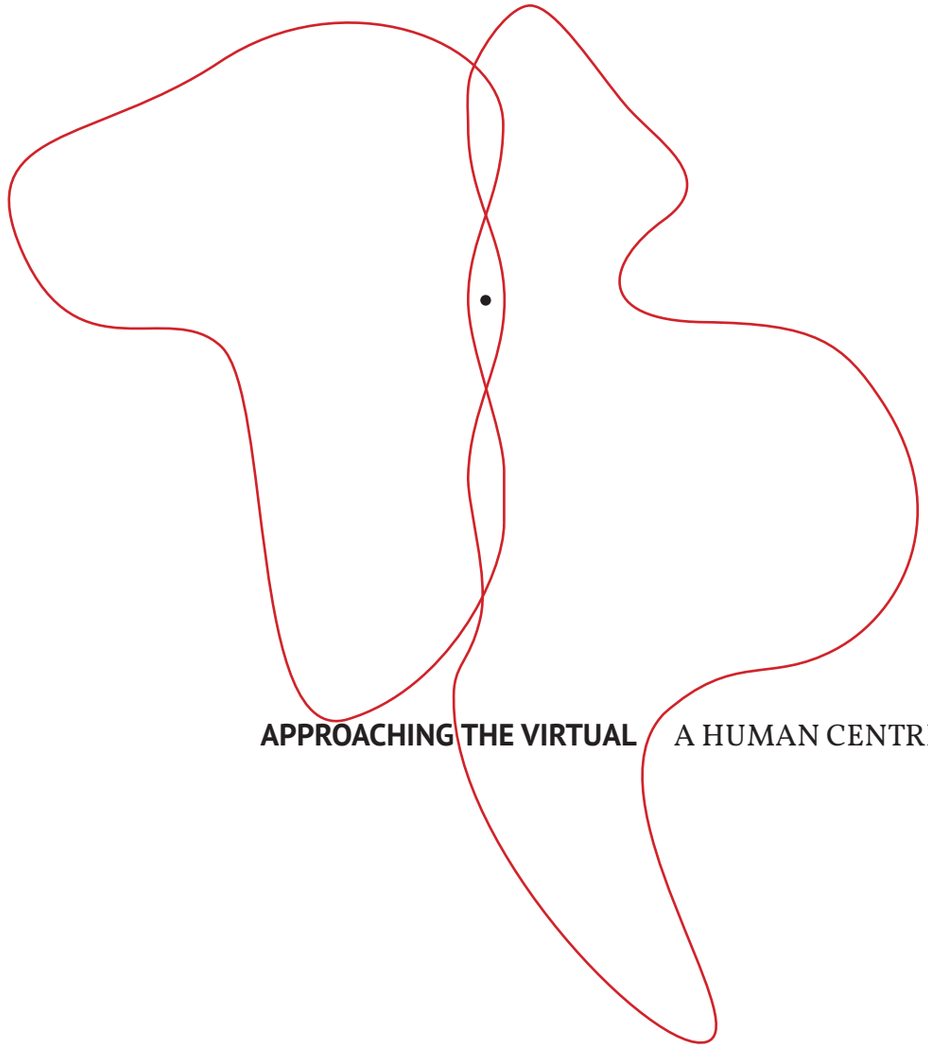
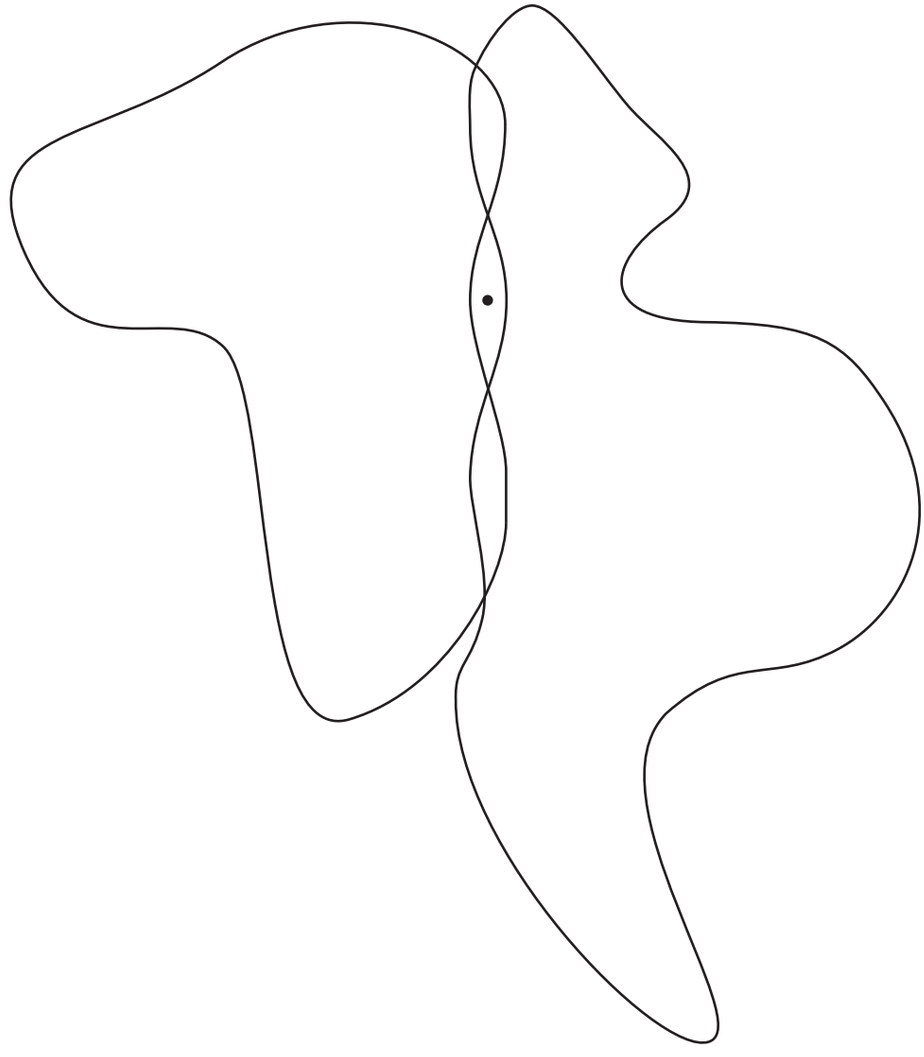


APPROACHING THE VIRTUAL A HUMAN CENTRED ARCHITECTURE

iulia radion



abstract

Humans, on a fundamental level, live not to survive but to explore, to gather knowledge and ask questions about ourselves and the world. Their development is as part of a habitat; they grow from it and have direct influence over it, in an emerging vortex of becoming. When the territory is known, when everything is interconnected, and there is no outside left to explore, to imagine, the vortex stagnates into a circle of imitation, into simulacra. Fortunately, this absolute condition is not part of the nature of reality. There is always a realm of the undiscovered, the unthought, the source of all emergence and becoming, called the virtual.

Architects, as humans who shape and manipulate habitats, must first of all be aware of the limitations and aspirations of the human nature, of themselves and the others who inhabit architecture. Considering the intertwined bond between human and habitat, architects have the role of exposing us to the edge of the virtual, to incide external forces and invite them into our perception, and to uncover the outside within the apparently known territory, arousing the multiplicity of the human condition.

Architecture is to be under constant interrogation to adjust to and mediate our becoming. While it shelters the body, it also needs to provoke it, to confront it with exterior forces, with whimsical and imaginative worlds. To keep itself emergent, architecture has to situate itself at the boundary, exposed to other disciplines and to the transformations taking place in the layers of the actual. A branch of architecture which inherently lives on the edge is virtual architecture. It embodies different mediums, drawing, text, film, digital, to create a habitat performed through the imagination of its visitors. Virtual architecture has the potential of unbounded critical experimentation, turning the perspective back on the reflection of what reality and the human truly are.

This thesis explores human-centred architecture at a fundamental level, searching for the ways our habitat can enable the unexpected. I examine the prospect of an architecture for the virtual in the current fabric of the actual, taking advantage of the fluidity and nomadism of the digitised culture. I analyse the intimate relation humans have with the environment, the factors which influence our perception of space and our ability to affect the world around us. The thesis culminates into an examination of architecture at the limit between physical and digital, employing virtual reality and motion sensing input devices to reflect on the fluid boundary between human and habitat. I see architecture as a celebration, as a mediator between us and the world to live fully, passionately, to rediscover the vigour of our being, to dream and imagine, to operate at the edge.

master's thesis for Master of Science (Architecture), 2017
Master's Programme in Architecture, AALTO UNIVERSITY
Supervisor: Prof. Dr. Toni Kotnik

contents

introduction

It is somehow evident that humans are the core of architecture. Inherently, architecture is a form of human expression meant to assist our existence in the world; we inhabit the spaces we create. However, without an explicit consideration of what being human involves, without a reflection on the effects the environments we develop have on its occupants, architecture is dislocated from its reason. After the dogmas of the discipline have been highjacked, loosened, expelled we need to render our own thinking and be conscious about the designs we propose to the world. The architects who do not comprehend the operations of their own mind and body create projects out of habit, inertia, prejudice, infecting our habitat with staleness. From the liminal space of the graduating student, I root the path of becoming architect in this fundamental question: What is being human?

This thesis is an exploration of the human condition beyond the functions of our survival and the structure of our social development, going to the basis of our existence as bodies in the world. I examine what we are outside pre-defined categories of well-being to postulate living deeply, passionately as the standard of human nature. For the homo ludens we are, the boundary between environment and ourselves dissolves into a constant flux of exchange and reaction. The role of architecture goes above granting what people want and expect, emerging to be an incentive for our becoming, to dismantle the limits of our knowledge and welcome the unknown. In this sense, I invoke 'the virtual,' as defined by Gilles Deleuze, to conjure the source of differentiation and potential, the realm of the innately unexplored because not yet accomplished. Thus, architecture should invite us to approach the virtual, granting the space needed for experimentation and dreaming. First, we need to understand how do human and architecture work together?

In this thesis, I investigate the fluid boundary between them in a three-part meditation on the subject. Each part addresses the relationship between human and architecture from a different perspective, encompassing the ideas in a cloud of associations. The first part, 'the real,' paints the overall image of the dynamics of our interactions within the world now. I begin with an ontological analysis of what reality is, to continue with a mapping of the movements within the Postmodern landscape, assessing the ways Neoliberalism, the digital, and cyberspace have influenced architecture's openness towards the virtual. In the second part, 'the human', I explore the layers of our presence in the world and the role the environment plays in our development, tracing the consequences of our recent dwelling in digital habitats. The third part, 'the virtual', examines the fluidity, ambiguity, and emergence of the human condition, searching for the practices through which architecture could partake to and enable them. I move through a series of philosophical discourses which dismiss the viability of binary structures such as human and environment, mind and body, past and future, to create a comprehensive image of the intertwinements innate in the human. The primary framework of my exploration is given by Gilles Deleuze's ideas of the virtual multiplicity through the texts of Massumi Brian, John Rajchman, Manuel Delanda, Elizabeth Grosz. The thesis explores the structure of human experience in the environment, the

interpositions between body and its context through Maurice Merleau-Ponty's phenomenological discourse on perception and consciousness. The theories of Douglas Spencer and Martin Reinhold raise questions about the challenges of architecture in neoliberalism, and the publications of Mario Carpo and Neil Spiller offer a foundation for future explorations in digital architecture. All the discourses converge towards an inclusion of temporality, of processes and emergence in architecture to grant the accommodation of future knowledge and differentiation.

Interposed inside the text, as a hiatus in the flow of thought, is a conceptual experiment at the border between theory and practice. The project is named Jo_nah and exists as a form of virtual architecture. Represented through language and diagrams in the mode of tangible artefacts (depicted as haptic images), the project strives to serve as the twenty-ten decade's 'paper architecture'. Using motion sensing input devices and virtual reality technologies, Jo_nah integrates both the physical and the digital to form a mirror of the current environment, engaging the human who visits it in a play between actual and virtual. Both the physical enclosure of the space and its digital metamorphoses in virtual reality participate to the assimilation of the human and its pointing towards unexpected configurations. Jo_nah stimulates the visitor through all the senses to retrace the relationship the human has with architecture, suggesting that the role we have when inhabiting space is less about exploration and more akin to actual creation. Body and architecture shape each other in a sensual experience.

Overall, the thesis is a speculation on the potential of architecture to expand and intermingle with other realms, not to dominate but to further differentiate itself in order to partake to the complexity of life. By exposing itself to the virtual, architecture engages the human in the interchanges within reality, augmenting the horizon of experience and knowledge. This thesis is an open-ended web, a contemplation on what we are now to open up the discourse towards the ambiguous future, keeping the limitations and potential of the human condition in thought.

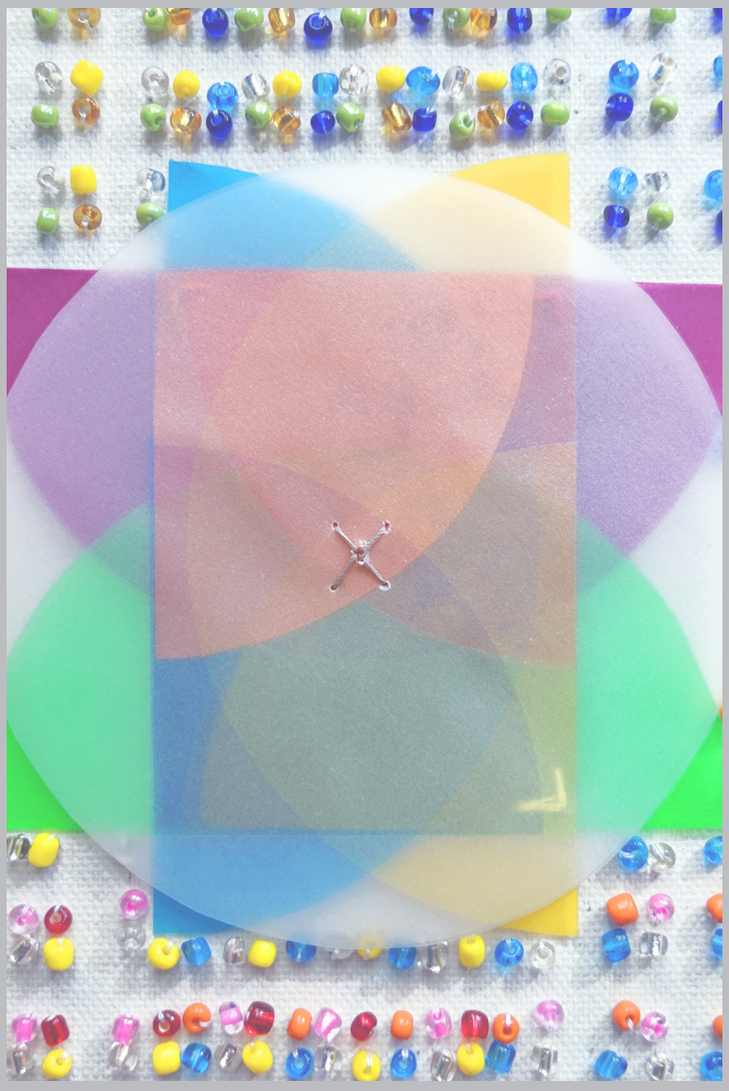
In appearance, the project is a room.
In reality, it is many.
It exists in-between physical and digital. The visitor enters Jo_nah by going both inside its 3x4 meters physical perimeter and inside its digital dimension through the VR helmet.
You touch the physical expression of the space, but you see and hear its digital presence.

The project unfolds as you move through it. It uncovers its hidden rooms, contracting and expanding, allowing itself to be touched as you reach its limits.

Its name comes from Marin Sorescu's elegiac parable "Jonah," derived from the homonymous biblical character which was swallowed by a fish.
"Io," Marin Sorescu says in the Preface, means "I" in some old language. Beyond the aloneness of the experience, Jo_nah is a play on the nature of the self. The space manifests only through you as your body connects the concrete with the digital. Visually, the image you associate with yourself, your body, disappears. Instead, you are what you experience, what you touch, see, hear, move through.
"Nah" is a play on the word "no."
As you become the space, the self fades.

-the multiplicitous nature of a room-

JO_NAH



Great is the Earth, and the way it became what it is;
Do you imagine it is stopped at this? the increase abandoned?
Understand then that it goes as far onward from this, as this is from the times when it lay in covering waters and gases, before man had appeared.

Walt Whitman—*Leaves of grass*

I

the real

In a nihilistic discharge, the philosopher Jean Baudrillard declares, in the 1981 treatise "Simulacra and Simulations," that we have obliviously abandoned the vigour of reality, the primacy of truth and meaning, for the stale territory of the simulacra. We are floating in a void, grabbing onto models reproduced so many times that they have lost any reference to reality, to an original —copies of copies of copies, etc.; a reversed vortex spinning us away from the genuine, the concrete. "The real is produced from miniaturized cells, matrices, and memory banks, models of control —and it can be reproduced an indefinite number of times from these. It no longer needs to be rational, because it no longer measures itself against either an ideal or negative instance. It is no longer anything but operational. In fact, it is no longer really the real, because no imaginary envelops it anymore. It is hyperreal, produced from a radiating synthesis of combinatory models in a hyperspace without atmosphere."[1] In Baudrillard perspective, the simulacrum is the essence of the Postmodern condition. In analogy with the phrase formulated by McLuhan, 'the medium is the message', he asserts that the extermination of meaning, the "neutralization of all content," leads in effect also to the dissolution of the medium, since there is nothing to mediate anymore in the homogeneous matter of the hyperreal.[2] The simulacrum embeds a hallucination of the model, a superficial hint to a connection with a predecessor, while its interior structure bears no relation to it. The real is replaced with a representation of reality. If everything is a sham, are we doomed to live in redundancy, is this the end? Or is Baudrillard just having an adverse reaction to Postmodernist discourse?

Baudrillard's perception of the simulacrum assumes a primordial layer associated with reality; one where you can always distinguish the original from the copy, where there is an original in the first place. He manifests a nostalgic longing for essence and prevalent truth. The connection between the authentic and its replica resembles the structure between signified and signifier in structuralism. Post-structuralism regarded this type of relations as particular phases in chains of meaning metamorphosis, instead of universal static categories. Similar to the duplication successions of the simulacrum, the signification process transforms each element of the chain, differentiating it from its precursor. In "Realer than real," the philosopher Massumi Brian takes on to clarify the concept of simulacrum from Deleuze's perspective:

> Pop Art is the example Deleuze uses for simulacra that have successfully broken out of the copy mold: the multiplied, stylized images take on a life of their own. The thrust of the process is not to become an equivalent of the "model" but to turn against it and its world in order to

open a new space for the simulacrum's own mad proliferation. The simulacrum affirms its own difference. It is not an implosion, but a differentiation; it is an index not of absolute proximity, but of galactic distances.[3]

Deleuze acknowledges the confusion arised from thinking about the simulacrum as the absolute alternative to reality. In his view, simulation participates to the creation of reality, to becoming. Specifically, the simulacrum is a 'double becoming' since the real states that act as sources for simulation "are in fact undercover simulacra that have consented to feign being copies,"[4] emphasises Massumi. The simulacrum is not a final abandonment of reality, but a means to pass into another state through imitation—the intensification of the real. In the same way as "an insect that mimics a leaf does so not to meld with the vegetable state of its surrounding milieu, but to reenter the higher realm of predatory animal warfare on a new footing."[5]

Deleuze identifies a different mishap in the world, one based not on the propagation of the image, but on the normalisation and perpetuation of clichés in our society. To illustrate this predisposition, he exposes the case of the painter, or the writer, commencing their work on a white canvas or an empty page. Similar to the hyperreality of Baudrillard's simulations, the surfaces and models, even when they appear barren, reference to the preconceptions of our mind; "the page or the canvas are already covered over with pre-existing, preestablished clichés."[6] What Deleuze summons in the use of clichés is the misleading belief that the real emanates from the possible. Taking something possible and realising it, fails to access anything fresh or different. In "Intensive Science and Virtual Philosophy," the philosopher Manuel DeLanda reveals the roots of Deleuzian thinking in Henri Bergson. The possible, Bergson asserted, implies a pre-defined development of forms, a predictable outcome — "realizing a possibility does not add anything to the pre-existing form but mere reality."[7] This looping of representations manifests as well in Baurlillard'd simulacra. However, the formulation of Baudrillard lays in a mirrored perspective from that of Bergson and Deleuze: while the formers acknowledge a stagnation of reality, in the redundancy of the possible, of clichés, Baudrillard notifies the departure from reality in the reiteration of models. Although their understanding of reality lies on different grounds and terms, the problem they identify corresponds: the inability to separate representation from reality.

In the pursuit of emancipation from 'the dogmatic image of thought,' Deleuze proposes a new structure for the ontology of the real, a replacement for the precarious possible-real opposition. He acknowledges a metaphysical continuum underneath the physical structure we perceive. Reality exists in two complementary states: the virtual and the actual —both equally real. The virtual is the non-metric continuum, a field of incorporeal processes and singularities linked through the complex structures of multiplicities; the 'élan vital.' Multiplicities compose the ambiguous rhizomatic framework of the virtual and are defined by sets of singularities which develop progressively, changing the nature of the multiplicity as they unravel. "A multiplicity is a nested set of vector fields related to each other by symmetry-breaking bifurcations, together with the distributions of attrac-

tors which define each of its embedded levels,"[8] explains DeLanda. Singularities are the attractors, the long-term tendencies of the system; ideal states which never fully realise. Singularities exist to each other in a "differential relation," asserts DeLanda. Difference is an important concept in Deleuzian philosophy, referring not to metric quantifications concerning pre-existent conditions, to original states, but to relative divergences —to difference in itself, measured regarding the states between entities, and the distinctions between development stages of the same entity. The differences between singularities are the enablers of the virtual, granting its manifestation. The differential relations between singular virtual points, and the tendency of the system to orbit amidst attractors, define the intensive nature of the virtual continuum. Intensities are the channel connecting the virtual and the actual, breaking the symmetric processes of the actual extensity to perform the actualization of the virtual. Deleuze explains the process of actualization:

> To be actualized . . . means to extend over a series of ordinary points; to be selected according to a rule of convergence; to be incarnated in a body; to become the state of a body; and to be renewed locally for the sake of limited new actualizations and extensions.[9]

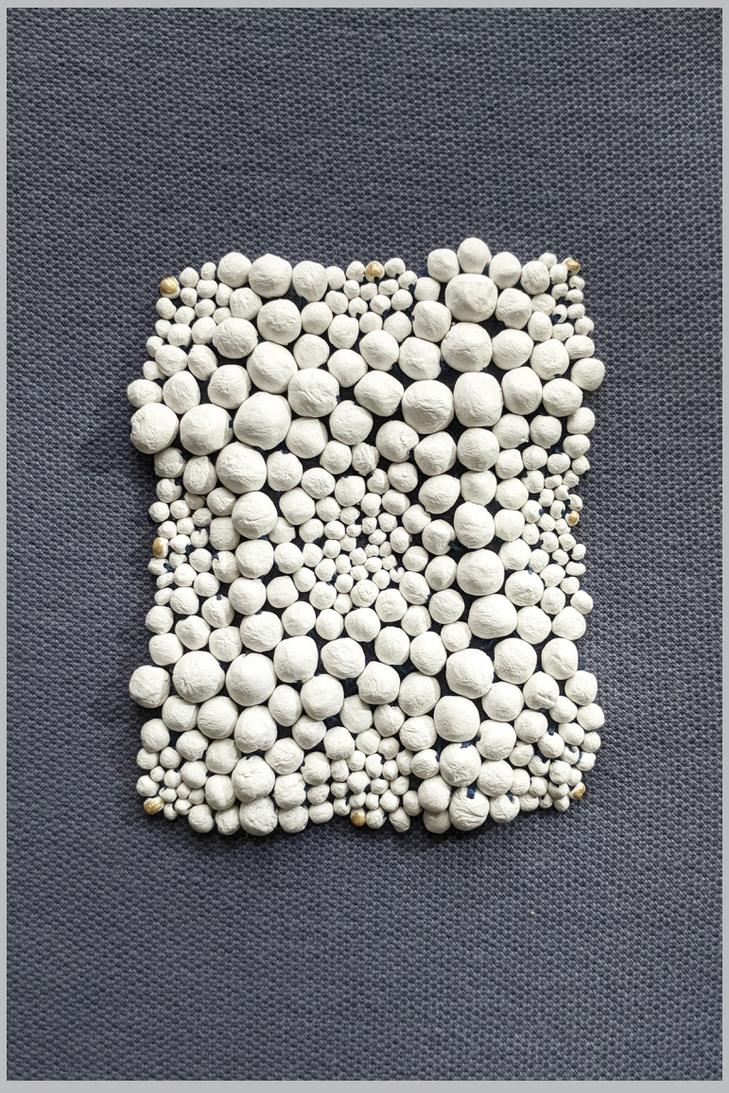
Virtual multiplicities do not realise, they actualise, as the virtual is always real. The virtual is the energy that animates the perplication of the actual, its tendency, vitality, and variation. The actual involves the concrete materials and forms, and their characteristics —the measurable metric spaces we inhabit. DeLanda describes Deleuze's and Guattari's formulation of the actual from "A Thousand Plateaus." The actual world, depicts DeLanda, is composed of different superimposed layers —social, cultural, natural, physical, etc.— termed 'strata.' The proprieties defining these layers divide into 'territorialities' and 'codes,' which Deleuze identifies as the attributes that fluctuate as the actual advances. Accordingly, 'territorialisation' and 'coding' are the intensive actualising processes generating the strata and participating in its development.[10] The actual emerges from intensive processes emanating from progressive differentiations of virtual multiplicities, breaking the symmetry of already established, extensive processes. Actualization is one act in the mechanism of becoming. Becoming is the gradual movement between intensive differences, which do not neutralise in the process but further advance, supporting the perpetuation of the virtual. With the concept of becoming, Deleuze refocuses our perception to identify objects based on their processes and tendencies, instead of fixating on their actualised form in one particular instance.

Becoming implies the repeated generation of intensive processes, with each step differentiated from the previous. Thus the procession from the virtual to the actual demands also a reaction from the actual towards the virtual, a counter-actualisation —a destabilisation of the actual transcending the intensive and accelerating into the virtual. The intensive is a transition between the actual and the virtual, opening the portal from one dimension to the other. DeLanda identifies the 'quasi-causal operator' as the driving force of the process. The operator contributes to the transition from both directions: pre-actualization and counter-actualization.

Architecture is usually represented through visualisation, photography, rendering, model, a static frame which freezes temporality and emergence. If you contain all in one image, is that it? Representation can never encompass a whole; it always subtracts and adds something. However, it can also perform at another level, to show the trajectories of the elements, the relationships between them, thus defining the understructure the project is built upon. In other words, representation should be a diagram.

Jo_nah changes with your movement, granting another space, image, affect, experience based on your point of view (pov), the origin of subjectivity. However, the forms Jo_nah changes into never exist simultaneously; one state corresponds to a particular position of the visitor. The singularities of the project are its predefined rooms, linked to the concrete, tactile experience of the limit. The rooms are placed as follows: one in each corner, one in the middle of each edge, and one in the centre (which is the initial meeting point between the visitor and the place). Beyond these areas, the rooms intermingle, progress from one to the other, acquiring unplanned configurations. The rooms are the configurations the place inclines towards, pre-planned actualities. The most intensive states of Jo_nah are those where the direction is yet undefined, in-between. This is where differences integrate with each other and diverge into the unexpected. Jo_nah exists as becoming.

-identity as becoming-



Initially, the quasi-causal operator induces an incipient broken symmetry. It develops convergent and divergent relations between the ordinal series of the multiplicities, provoking them to "progressively unfold and differentiate without fully actualizing."[11] This action sets off a serial reaction that culminates in complete actualisation. In counter-actualization, the quasi-causal operator picks up 'folded' multiplicities from actual events that operate outside equilibrium, intensifying them to reach virtuality. Processes of 'deterritorialization' and 'decoding' augment the strata from within, driving away from symmetry and opening towards the virtual.

Each of these two operations would possess a temporal dimension: the quasi-causal operator would sample or section all actual events, at all different time scales, instantaneously; then, each flat multiplicity would be immediately unfolded in two unlimited directions at once, past and future, distributing the singularities which define each of the unfolding levels on both sides of the instant at once, "in the manner of a pod which releases its spores". [12]

The nature of multiplicities reveals the nomadism of reality. Multiplicities take their character from sets of singularities which do not manifest simultaneously, explains DeLanda, but unfold along a structure that appoints them progressively in determining the nature of the multiplicity; "multiplicities are, by design, obscure and distinct"[13]. In contrast to the concept of essences, which maintain a unique, clearly defined nature, multiplicities depend on the mechanism generating them. Sets of singularities are concrete attractors directing the tendencies of the process, while the bifurcated structure linking them causes unpredictable transitions from one singularity to another. "Unlike essences which assume that matter is a passive receptacle for external forms, multiplicities are immanent to material processes, defining their spontaneous capacity to generate pattern without external intervention."[14] Thus, multiplicities are 'concrete universals'[15], giving rise to divergent processes, with no prediction of their outcome.

One of the main critiques of Merleau-Ponty's theory (and of phenomenology in general) is the reliance on essences as primal, universal truths. However, Merleau-Ponty articulates a different formulation of the relation essences have with philosophy and reality. In the Preface to "Phenomenology of Perception," he argues phenomenology takes essences and places them "back within existence," using them to grasp on our presence in the world. It is a philosophy that reflects mostly on what is 'already there', "that suspends the affirmations of the natural attitude in order to understand them."[16] In this suspension, although essences are relied on as factual, they are not universal. They are the means through which we have to pass through to step back from our entanglement with the world and reflect; "our existence needs the field of ideality in order to know and to conquer its facticity."[17] We adopt essences as tendencies; they are "the nature of our existence," the perspective we set on to analyse and reach an understanding of the world. Merleau Ponty rejects the belief in invariable, universal truths, saying that all ideas have a date: "When one reflects and thinks things through to the very end, one will not necessary arrive at eternal truths. By the purest thought one will, rather, discover an intelligible becoming

of ideas, a 'generation of meaning' [Sinngenesis]."[18] Thus Merleau-Ponty recognises the innate becoming of the world, going as far as to say that the world only shows itself to us in our experiences, so in processes. "The world is not what I think, but what I live [ce que je vis]."[19] Furthermore, in its immensity, we could never possess the world wholly.

To grasp our immersion in the world, the 'intimacy' of our body with the 'visible,' Merleau-Ponty gathered the reality they both belong to under a single term: the 'flesh'.[20] Our body as flesh is a 'fold' between two aspects of reality, between the touched and the touching, the seer and the visible; it "is both an object for others and a subject for me."[21] When we see a colour or a thing, as part of the 'fabric of the visible', it is in front of us only related to the other colours and things in its surrounding, and to the ones we have previously observed in sight and in imagination; "it is a certain node in the woof of the simultaneous and the successive." [22] Colours and things do not exist as absolute beings, but they are part of the flesh connecting interior and exterior horizons through differentiation; "less a color or a thing, therefore, than a difference between things and colors, a momentary crystallization of colored being or of visibility."[23] Merleau-Ponty explains the hidden dimension of the flesh, the element that links the chunks of the visible, from where the visible emerges, as the 'invisible'. It is "a sublimation of the flesh,"[24] that which performs and situates the visible, its depth. Our bodies are mechanisms of the flesh to access the invisible through our experiences of the world which traverse us, from the objective body to phenomenal body, from the body as sensible to the body as sentient. [25] Thus we belong to the crossing between the visible and the invisible, described by Merleau-Ponty as the 'chiasm'. With every crossing-in of the visible, there is a "crossing-out" in effect, a becoming of the visible element, animating it.[26] "The phenomenological world is not the making explicit of a prior being, but rather the founding of being; philosophy is not the reflection of a prior truth, but rather, like art, the actualization of a truth,"[27] asserts Merleau-Ponty. The world does not reduce to a primal Reason, but the only thing that precedes it is itself, and everything that emerges from it is as real as the world it belongs to.

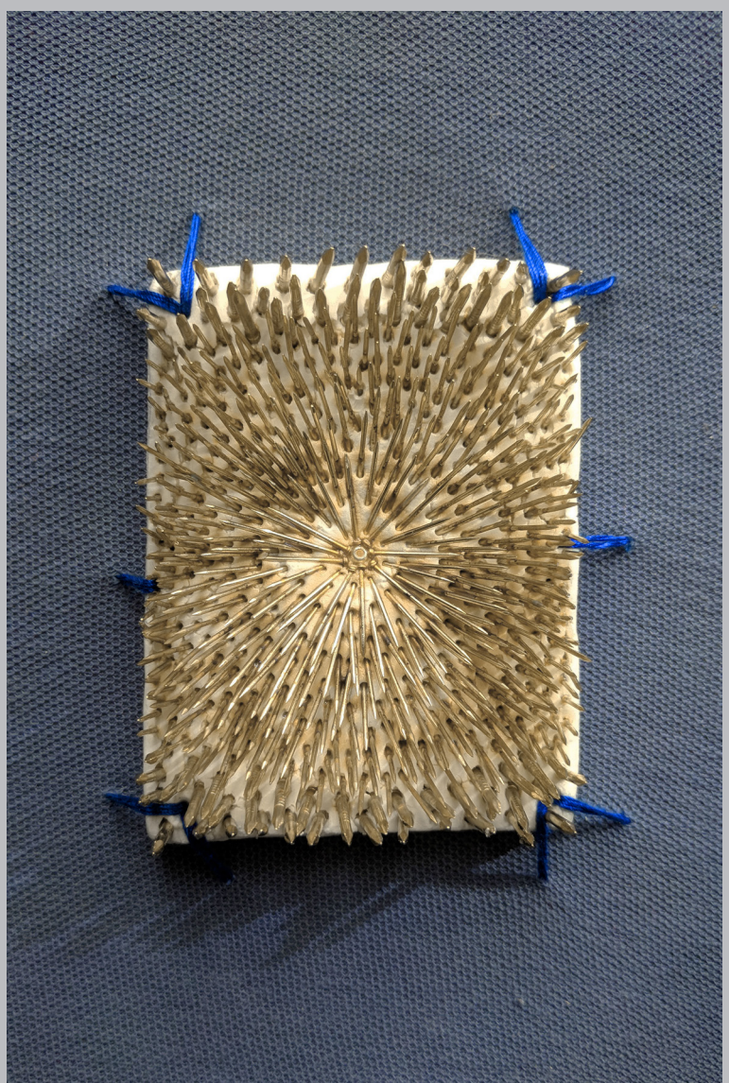
> In sum, philosophy interrogates the perceptual faith—but neither expects nor receives an answer in the ordinary sense, because it is not the disclosing of a variable or of an unknown invariant that will satisfy this question, and because the existing world exists in the interrogative mode.[28]

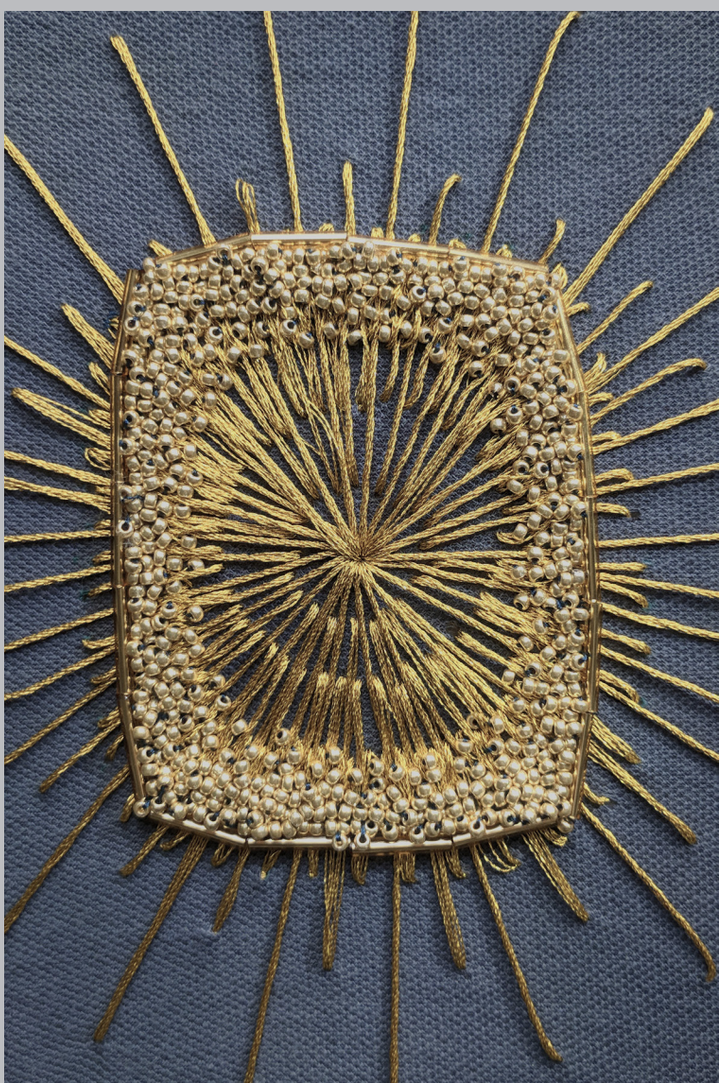
Both Deleuze and Maurice-Ponty recognise the transformative and ambiguous character of reality and the problems arising when we do not acknowledge the hidden, emergent layers (the virtual in Deleuze, or the invisible in Merleau-Ponty), when we rely on representations, unable to recognise and produce genuine images. The two philosophers borrow from Bergson's philosophy of change. Henri Bergson argued that when we conform to the static and the normative, when we "shut up motion in space" we are incapable of appreciating the heterogeneity and dynamism of the world.[29]

In most architectural spaces, the centre is all-encompassing, the point from where all can be contained by sight, the vertical axis everything revolves around. In Jo_nah, the centre is a field condition, a blank space—the spatial equivalent of white noise— extending and pressing horizontally to provoke you to move, explore. It reveals nothing but itself, indicating that you can not contain all the knowledge by just looking. The project only exposes itself as you move, as you become a part of it. So the spaces unfurl and contract, the succeeding borrowing from the former until you reach the periphery. The edge collects the substance, affecting the body through all its senses to develop a sensual, fleshy relationship. It urges you to stick around and play, converging the space vertically.

-the core in the periphery-

JO_NAH





In order to acknowledge the nomadism of reality, we need to embody it, to offer ourselves as portals:

> Our mind, which seeks solid bases of operation, has as its principal function, in the ordinary course of life, to imagine states and things. Now and then it takes quasi-instantaneous views of the undivided mobility of the real. It thus obtains sensations and ideas. By that means it substitutes fixed points which mark a direction of change and tendency. This substitution is necessary to common sense, to language, to practical life, and even . . . to positive science. Our intelligence, when it follows its natural inclination, proceeds by solid perceptions on the one hand, and by stable conceptions on the other.[30]

Returning to Baudrillard, the simulacrum is the perpetuation of clichés, in the illusion that the emanation from the possible could introduce a new stage of the real. It is the suffocation of intensities and differences which provoke counter-actualisation, stagnating the becoming of reality. When we limit the real to the visible, the metric, the actual, we abandon truth and meaning for representation. To leave the hyperreal, we re-embrace difference and discover new territories to explore through imagination, intensifying the processes we initiate to reach the virtual. "Because it is difference that constitutes the poetry of the map and the charm of the territory, the magic of the concept and the charm of the real."[31] Therefore, let us open our eyes to what is and what might be beyond, to proceed both ways in full awareness of our position as "the world that thinks itself,"[32] and as beings "composed of multiplicities."[33] To expose ourselves and the world to difference, to new configurations, disturbing the established.

architecture exists in the interrogative mode

Throughout centuries, the way we regarded architecture changed progressively, intertwined with developments in mechanisms of power, culture, and economy. One predicament that remained constant is the mediation of reality through representations, dating back to the foundations of the discipline, to Vitruvius and Alberti, with Classical conventions of systems of representation based on nature mimesis. Postmodernity confronted architecture with an implosion of images and models and made it difficult to distinguish between what is a representation and what is the reality. This destabilisation is the follow-up of Modernism's pursuit to reconsider architecture, against its historical conventions and representations, to establish new norms founded on the primacy of function. Modernists rejected previous ideologies for being outdated and proposed the construction of new ones, aligned to modern developments in technology, science, thinking. While they dismissed formal aesthetics and acknowledged the fragmentation and incoherence of the world, Modern architecture was supposed to be a celebration of the modern man, to provide unity, order, coherence in the chaotic backdrop. Postmodernism, in turn, renounced dogmatism in any form, arguing for the embrace of the frivolity and contradiction in the world, and for an architecture that conforms to the dynamic reality. In "Utopia's Ghost: Architecture and

Postmodernism, Again," the architect Martin Reinhold explains the "foundational insecurity"' set off with the repudiation of ideology in a discipline traditionally linked with systems of control, generating a self-interrogation: "Is there an architecture?"[34]

Left outside devices traditionally employed, architects took a look back at the discipline's history, dissociating it from systems of power, "as if to insist that this was all that it was about; it was architecture about architecture, and nothing else,"[35] argues Reinhold. The discipline referenced back to itself to establish a central core, to validate and protect its status from being associated as mere building. The primary device of 'Postmodern historicism' was typology, a collection of construction elements which "refer only to their own nature as architectural elements, and their geometries are neither naturalistic nor technical but essentially architectural."[36] A playful architectural collage of reassembled historical fragments placed in a new form and context, emerging as something new, different. The alternative to historical quotation was the referencing and assimilation of popular culture. The best illustration is the populism of Robert Venturi and Denise Scott Brown, introduced through the arguments from "Complexity and Contradiction in Architecture," by Venturi alone, and "Learning from Las Vegas." Architecture as metabolization of mass symbols, to climb down from its noble throne and reconnect to the 'real' world.

Aspiring to an architecture in synchronicity with reality (reality which extended now to the global) involved a reaction to the main driving force of society: the neoliberal market economy. In the spontaneous order of capitalism, "instead of 'conforming' to our knowledge, the world demands that we submit to the innate 'knowledge' of the market, to its capacity to spontaneously order our lives and facilitate our freedoms,"[37] asserts the critic Douglas Spencer. Architecture as a product of the market has no need for self-reflection or hidden dimensions. Its only competence is the procession and recognition of patterns, submitting to "the larger and superior processual order of the market."[38] Between the compliance to the market and the adaptation to pop symbolism, architecture loses its interiority, guided by fetishes derived from habits of perception in media technologies. Its extensive distribution through mass media led to a focus on architecture as image and autonomous form, ignoring context and spatial experience. Martin Reinhold believes the focus on aesthetics "played right into the demand for a maximum of spectacularization (in what is now called 'signature architecture')."[39] Singular individual languages represented architecture in the mass media as new models to be perpetuated, introduced in the hyperreal.

Without a theory to support it and a reference only to itself (architecture for architecture's sake), no critical interrogation could be formulated anymore. This embrace of the status quo is a reverberation of neoliberalism into architecture. The nominalism of late capitalism, explains the critic and political theorist Fredric Jameson, "included empiricism and positivism, and the gradual extinction of the negative and the dialectical —

it named a social order so absolute that no critical thinking, let alone political resistance, could take place within it."[40] With no resistance nor critique, the project exists in a perplication of the present. Architecture assumes its presence in the hyper loop and continues to rely on what already is as validation; it focuses on ontological dimensions (on just being) instead of engaging in epistemological inquiries —on experimental projects that do not have a pre-established, expected outcome. The ontological foundation of the current tendencies in architecture takes the possible as source for the emergence of the real, adding to the simulacrum.

A team of architects that dared to challenge the ontological foundations of architecture and defy its status quo was the avant-garde group Archigram. They pursued a radical examination of what architecture is, departing from theory to declare the birthplace of every project in inspiration. Archigram criticised Modernism's hesitation to fully embrace technology and were determined to create architecture as the absolute 'machine for living in'. From their perspective, reveals architecture researcher Simon Sadler, architects "should not create fixed volumes of space to be mutely inhabited, less still shaped masses of masonry, but must provide the equipment for 'living,' for 'being.'"[41] Archigram was the project for the infinitely flexible structure, abandoning monumentality for the building fabricated from interchangeable, disposable parts. An architecture where the user becomes the architect as well, where nomadism of location is combined with nomadism of form and function, composing a machine of 'pure indeterminacy'. While Archigram's projects served as inspiration for the latter high-tech architecture, its ideas are still to be processed. Their proposition was an abrupt revolution difficult to assimilate at the time. However, their vision was an orientation towards the future, a tendency to be adjusted, contrary to the reiterations of the existent usually employed by architects. What we have to imagine, adds Simon Sadler, is "what sort of economy was to support Archigram's architecture of flux and fun."[42] We also need to ask ourselves if the future they imagined —of mechanistic, indetermined buildings which rely strongly on technology for production and maintenance— still is about architecture, or if it already goes beyond it, into the post-architectural age.

A separate reaction to architecture's establishment of the status quo (and the solipsism of the discipline) was the incorporation of sustainability as a design philosophy. Initially, as an environmental perspective, and further as a holistic integration of all strata of the actual, sustainability reintroduced the controversy of the future into discussion. It pointed to the fact that architecture could never be only about architecture, since it influences to a great deal the local context it is placed upon —and the global context through its influences and its resource consumption during construction and over time. Our nonchalance in taking everything as it goes, without drawing trajectories for the future could not sustainably hold anymore. The French psychoanalyst Didier Anzieu urges us:

We need to set limits: on demographic expansion [. . .] on the acceleration of history, on economic growth, on insatiable consumption [. . .]

> on the compulsion endlessly to break records at the cost of over-training and drug taking, on the ambition to always go faster and to spend more, with all the overcrowding, nervous tension, cardiovascular illness and general discontent that results. We need to set limits on the violence wrought on nature as well as that perpetrated on human beings. This includes the pollution of the earth, sea and atmosphere, the squandering of energy, the need to produce everything of which we are technically capable even when that means creating mechanical, architectural, or biological monstrosities [. . .] By refusing to set limits anywhere, we are headed towards catastrophe.[43]

The mass spreading of the concept of sustainability led to the hijacking of the term. Sustainability is not assumed as a challenge, as constant interrogation and reflection to adjust our vision for the future; but as ready-made solution to be applied in order to sell better. The fetish of 'green architecture' led to a normalisation of the projects employing sustainability, with reliance on the measurable, the demonstrable, a need for data and statistics that inevitably abstract the problem, which is poorly formulated in the first place. An architecture feeding on clichés, relocating its predicaments on technology. We need to remember that there are things beyond the quantitative, the metric, things fundamental to the becoming of the world (and to ours) which ultimately separate mere building from architecture.

Beyond any critique of architecture's inability to find conclusive solutions to current predicaments, we need to celebrate just that: architecture is beyond the affirmation of a final resolution. It is beyond the loop of self-referencing, the fetishes of popular media, the homogenization of technological means; architecture has no definite definition. Beyond the doubts directed at the mystery of the practice —architecture "as a conspiracy of secrecy" the architectural critic Reyner Banham referred to as 'the Black Box'[44]— architecture is here, under our eyes (and around and inside us), becoming. Keeping architecture open, sustainable, means to continually interrogate it; to identify our habits and assumptions, and to expose our imagination to the virtual.

the digital habitat - the habitat digital

In his treatise "De re Aedificatoria," Leon Battista Alberti advocates for a division in the process leading to the building of an edifice: the conception, to be an intellectual process conducted by the architect, and construction, the manual labour performed by workers. His treatise is the establishment of architecture as a profession, derived from the medieval master builder.[45] The split between design and making stood as foundation of the discipline until recent disturbances caused by digital technologies, which transformed the workflow of the architect.

Architects used to accomplish their creative endeavour through hand-made drawings and models, unique and unreproducible architectural performances. However, beyond their singularity, drawings and models were not supposed to be aesthetic enticements for the clients, recommends Alberti, but operative means of representation:

The presentation of models that have been colored and lewdly dressed with the allurement of painting is the mark of no architect intent on conveying the facts; rather it is that of a conceited one, striving to attract and seduce the eye of the beholder, and to divert his attention from a proper examination of the parts to be considered, toward the admiration of himself.[46]

The debut of computer-aided design (CAD) transformed the way architects handled their representations. From physical, singular illustrations they transferred to digital environments. Drawings were now reproducible without the existence of an original, valuing the architectural information, not the medium it is embedded on; the message is the message. Iterations were easier to perform (hand-drawn representations were time-consuming), making the processes of representing and thinking architecture emerge together. On the other hand, the digital environment was more restrictive than the free-flow movement of the hand on paper, constraining the operations to Euclidian space. CAD also allowed a larger amount of ready-mades (although they were used before as well through stencils), which encouraged repetition and habit.

However, the prefabs revolution intervened after the establishment of Building Information Modeling (BIM), software based on 3D models incorporating all the information needed for a project. BIM's most significant contribution was 'closing the gap' between the professionals working on the project, revealing architecture as the collaborative process it is. The 3D BIM model is a virtual embodiment of the actual building, bringing representation and production closer together. Nonetheless, BIM is still better adjusted to Euclidian constraints and encourages the use of pre-established components (although with some effort they can be personalised and individualised for every project). The digital liberation from Euclidian geometry happened with the introduction of spline and NURBS (non-uniform B-spline) surfaces, with software like Maya and Rhino, founding new computational design techniques with free-flowing surfaces and algorithm-generated complex geometries. While the means of architectural expression were boundless, the means of production were limited and expensive. Digital fabrication methods stand as the latest reformation of the practice, using robotics to decisively attach creation to production. Computational design and digital fabrication integrate not only the collaboration between professionals in the formulation process, but also the different layers of the building that used to partake in disarray: structure, form, and material, in correspondence.

Computational design, algorithm use, and digital fabrication gave rise to a fresh paradigm in architecture: New Structuralism. In New Structuralism, the application of 'structuring' grants the emergence of an irregular, complex, customised architecture, a shift from the tendency toward standardisation of previous computational design. Architects Rivka Oxman and Robert Oxman explain the implications: "Structuring is a discretization process which formalises structural patterns, and structuring research provides general knowledge of configurative potential for evolutionary transformability as well as geometric attributes such as heterogeneity or diversity. The resultant digital tectonic can parametrically represent the transformational genera-

tion of configurative pattern."[47] New structuralism overrides the formal undertaking of Postmodernism, which was indifferent to the material employed, and compiles form, structure, and material as outcomes of a singular architectural gesture, adopting a "holistic approach to tectonics." This method focuses on design knowledge, on realising experimental and different projects, which manifest as assemblages of parts performing together. The design process develops through the use of digital tectonics, a mix between scripting programs generating geometric representations, and digital crafting techniques to produce and adjust the code for evolutionary development. "Digital tectonics is the coincidence between geometric representations of structuring and the program that modulates them. Some of the design and research processes associated with structuring are supported by such programs. Using digital tectonics, structural topologies can be modulated through encoding as parametric topologies."[48] If usually the engineer was given a secondary role, developing the ideas of the architect, in design tectonics the design engineer is the director of the process. 'Design engineering' is often defined as an intensive collaboration between the architect and the engineer, but the design engineer as a defined profession emerges stronger, a single specialised individual. Does this mean that the role of the architect needs to expand and transform, combining with that of the structural engineer? If not, what is the role left for the architect in design? Although experimentation and design research are essential, if a project is to be architecture it should incorporate something more than itself, a poetry of being and becoming, mediating the virtual toward the human.

> If architecture is to embody ideas and values it must transcend architectural understandings based on glib association, superficial ' readings' and pop symbolism. A richer palette of details would make possible a wider range of architectural understandings independent of some overriding, oversimplified, inaccurate narrative of the technological present. Should we not pursue deeper understangings that come by perceiving that a building is an assembly of forces in a precarious equilibrium, constructed of parts of a comprehensible size, crafted by both the hand and the machine? [Edward Ford][49]

In a building, the element articulating it most towards the human —which gives the building an inflexion of forces similar to our body, helping us embody and understand it— is the detail. In architecture as an assemblage, the detail is the smallest component, the container of the narrative. Theories of assemblage, of rhizomatic structures, of complexity, and self-emergence, theorised by Deleuze and Guattari, have redefined architecture's relation with the detail. The researcher Mark Garcia asserts: "These innovative kinds of minute and invisible details became associated with new phenomena, and also sometimes referred to as 'formless'; they include folds, cells, cellular automata, pleats, pliancies, seamlessness, gradients, branches, rhizomes, holograms, fractals, blobs, knots, textiles, fields, bubbles, foams, threads, (point) clouds, nodes, swarms/flocks, shells and monocoques."[50] The details of the assemblage are integrated into one gesture with the rest of the layers of the building. The detail dictates the architecture, and architecture performs the detail. The architectural critic Nina Rappaport describes the structural holism of the architectural assemblage as 'deep structure'.[51] The structure

also incorporates the deeper meanings, performing as decoration in the nonlinear space. "Deep decoration," asserts Rappaport, "therefore results from integrating structure as part of a project where the parts to the whole have a meaningful and necessary relationship."[52] The holistic approach presumably grants simultaneously complexity and coherence, in a fluidity of form. However, can there be complexity without contradiction, when everything is the effect of a unified impulse? Why the emphasis on the single gesture, beginning to emerge as a fetish of discourse? The significance of 'deep decoration' does not depend in it assimilating to the integral, but in opening our minds to the multiplicity of states it can perform. To the fact that decoration exists not only as welded embellishment; it breathes in the textures, the folds, the gradients and colours, the intensities of the space enabling the virtual.

I do not doubt but the majesty and beauty of the world are latent in any iota of the world. . . .I do not doubt there is far more in trivialities, insects, vulgar persons, dwarfs, weeds, rejected refuse, than I have supposed.[Walt Whitman—"Leaves of grass"]

With the change of perception, there is a change in paradigm; the role of decoration transforms fundamentally. It is not ornamentation added to the structure in the last step of the process; instead, the project emerges from decoration as its foundation. In Mark Wigley's essay "Untitled: the housing of gender," he reveals that also, at the incipiency of architecture as a discipline, the primacy of decoration was the initiator of the building. Analysing Gottfried Semper's inquiry into the origins of architecture from "The Four Elements of Architecture and Other Writings," Wigley observes that, initially, woven fabrics were placed to produce the place, to create the 'space of domesticity'. "Housing is an effect of decoration. It is not that the fabrics are arranged in a way that provides physical shelter. Rather, their textuality defines a space of exchange."[53] In antiquity, decoration was the ideal representation contained by the order. Alberti describes it as a mask the building carries, a disguise as a higher order "to conceal the essential irrationality of both individuals and society,"[54] explains Wigley. Later on, the ornament was dismissed as vulgar, culminating with Adolf Loos's manifesto "Ornament and crime," in which he promotes the clean, smooth surface as universal and unprejudiced by fashion. Wigley compares this to "an architecture of the white shirt rather than the clean body."[55] When ornament was expelled as excessive, some associated it with the feminine, as the irrational, fluid, unconfined, opposed to order and structure. "The white wall is the mask of unmasking. Its ideological authority is bound to the production-domestication of women, buildings, and the discipline responsible for them."[56] However, decoration was not always associated with the feminine, the Doric column being a good illustration of that. But the infatuation with purity and order connects to what Deleuze calls 'societies of control'. Against it, Elizabeth Grosz reminds us that architecture is the exuberance of being: "I simply want to argue that the gift of architecture is always in excess of function, practicality, mere housing or shelter. It is also always about the celebration of an above-subsistence sociality, a cultural excess that needs elevation, not diminution. (Indeed, the very idea of functionality is itself another

product of the cultural luxury of reflection that surpasses need.)"[57] An architecture of excess, of detail, of decoration, of the redundant, and the extrafunctional, might act as a force of production, a space for difference and contradictions, creating intensities.

> As Bataille identifies it, architecture must seek its own excesses, its bestial monstrosity, its allegiances with forces, affects, energies, experiments, rather than with ordinances, rules, function, or form. We must ask, following this understanding of the place of the excessive as transgression, how to engender an architectural "bestial monstrosity," a radically antifunctional architecture, an architecture that is anti-authoritarian and antibureaucratic.[58]

Grosz does not suggest a return to an "ornament for ornament's sake," rather the inclusion of an excess absorbed throughout the layers of the building[59] —in the details that form the assemblage, in multiplicities, complexity, and in time dedicated to the thinking and rethinking of architecture. Architecture should avoid the dogma of the pure object, which pertains only to itself and constrains the becoming of the environment it gathers, and allow itself to be vulnerable, ambiguous and controversial. Kengo Kuma acknowledges that since "everything is interconnected and intertwined," architecture should also comply with the ambiguities of matter and individuals.[60] He formulates a paradigm based on the 'anti-object'. The anti-object does not conform to the Aristotelian theory of the whole greater than its parts, since it forms no whole whatsoever; it is an assemblage, architecture made exclusively of parts, only detail and excess.

Digital architecture has advanced the discipline closer to the virtual, to experimentation and imagination, to complexity. However, where does it stand in relation to the human? The architect Neil Spiller defines the current evolution as 'digital solipsism' concerned only with empty innovation, cultivating an architecture turned inward, toward itself.[61] What is the connection digital architecture sustains with the body? Its satisfaction with perfection and coherence bears further the mark of the machine rather than the human. Juhani Pallasmaa reminds us of the words of John Ruskin: "Imperfection is in some way essential to all that we know of life. It is a sign of life in a mortal body, that is to say, of a state of process and change. Nothing that lives is, or can be, rigidly perfect: part of it is decaying, part nascent [. . .] And in all things that live there are certain irregularities and deficiencies, which are not only signs of life but sources of beauty."[62] Palasmaa militates for the re-mystification of architecture, containing poetry and enigma as channels of human expression. Beyond its strive for perfection, digital architecture is regarded by some as being too different, too unfamiliar. When assigning meaning, users relate to their previous experiences; faced with the uncanny, human subjects might perceive a project as unrelatable. Juhani Palasmaa expands on the subject:

> As our age seems to value fictions, fantasies, and virtual realities, I wish to include an example of the role of the sense of reality in artistic works. Jorge Luis Borges gives us important advice concerning the requirement for a sense of reality and artistic plausibility: "Reality is not always probable, or likely. But if you're writing a story, you have to make it as plausible as you can, because otherwise the reader's imagina-

tion will reject it." Regardless of today's obsession with the fantastic image, architecture is similarly an art form of reality, not fantasy; architecture's task is to reinforce our sense of the real and, through doing that, to liberate our senses and imagination.[63]

Digital technologies are loosening the solidity of architecture, redefining its reality. Building's connection with the human is stimulated through a less concrete layer, what architects Carlo Ratti and Matthew Claudel called the 'invisible detail'.[64] Using the microchip, "digitally infused space" reacts to human movement and behaviour providing "intangible interactions with the building and its inhabitants."[65] These reactive actions perform in-between physical contact and virtual feedback, challenging the need of tangible friction to articulate the human with the space. Another kind of invisible layer added to the building to perform digitally is augmented reality (AR). While mediated through a device, the augmentation creates a composite between digital and concrete to open architecture to alternative transformative scenarios. Virtual Reality (VR), on the other hand, immerses the human into an entirely digital model, generating spatial perception through its stereoscopic display. Situating the subject in the midst of the digital space helps establish human perception and reaction to a project before its construction, so designers can reiterate it accordingly; the emergence of a user testing system for architecture. To the critique the digital receives for not relating to the physical, these processes illustrate not only that the physical-digital boundary has been hijacked, but that the digital might become the mediator for a human-centred architecture. Moreover, the digital cyberspace already affects all strata of the actual, from cities to the individuals inhabiting them. There is "a high-powered computer in almost every pocket."[66] If architecture does not regard the digital, it might become redundant. Furthermore, the advantage the digital offers is valuable: as the realm of excess and infinite production, it can be the ground for a new playful, experimental architecture, allowing investigations with minimum resource use, working toward sustainable experimentation.

Cyberspace instituted the screen as the medium of interaction between us and the world. Distance, space reduced to the 'terminal screen', conditioned only by the transmission speed of information. In his essay "The Overexposed city," the urbanist and philosopher Paul Virilio describes the interface of the screen to be the latest boundary of the city. The city is not limited to location anymore; instead, it opens towards "an unbounded expanse."[67] The intramural-extramural relation was disturbed already with modern developments in transport and communication technologies. With cyber technologies, the global performs now as "a single urban mass."[68] The city operates through the body, being able to affect it without the interference of matter or object. Cyberspace is the new context for architecture, its latest surrounding. The cross from public to private is now mediated not only through door and window —public and private are not simplify opposed anymore. There is a private-public: the digital presence on social media platforms, an exposure to the global from the intimacy of one's private chamber. And there is a public-private: the isolation in one's private digital world in the screen of the digital device, under the exposure of a physical public space.

> Deprived of objective boundaries, the architectonic element begins to drift and float in an electronic ether, devoid of spatial dimensions, but inscribed in the singular temporality of an instantaneous diffusion. From here on people can't be separated by physical obstacles or by temporal distances. With the interfacing of computer terminals and video monitors, distinctions here and there no longer mean anything.[69]

The main hesitation towards the digital is its virtuality, its unphysicality, which might bring alienation to the embodied human. Elizabeth Grosz quotes from a letter describing the conference "The Virtual Body": "In the historic city, a body is necessary to sustain oneself; in the new city of the Internet, only a mind need function. What are the implications of this reconfiguration of the mind/body relationship to the continued viability of the city? How will the new collective of cyberspace, one that is conceptual rather than physical, understand the physical body and physical city?"[70] However, this scepticism emerges from the erroneous idea that body and mind function separately. We are at all times embodied as we exist only through our body. If we can immerse ourselves into an imaginary space, that is due to our body's accumulated experiences of physical spaces and its ability to simulate and imagine the encounter. The digital is always a bodily experience. At the same time, the digital is not equivalent to the virtual. In evidence, Massumi Brian explains that sometimes the digital connects very poorly to the virtual, rather inclining to systemize the possible, the actual, in order to appear more concrete and believable.[71] Nonetheless, even if the digital in-itself is pre-programmed, what it allows is a potential for accumulation and expression. This openness to development is the manifestation of its virtuality. "Digital processing as such doesn't possibilize let alone virtualize. The digital is already exhaustively possibilistic. It can, it turns out, potentialize, but only indirectly, through the experiential relays the reception of its outcomes sets in motion."[72] Thus any virtuality that arises is not embedded in the code; it emerges from the processes the digital stimulates.

Looking away from the digital, we notice the virtual is contained in all arts and technologies which qualitatively transform something. "The invention of electronically generated media does not introduce us for the first time to virtuality," explains Elizabeth Grosz, "but rather renders virtuality more graphic. We were already in a certain mode of virtuality when we wrote letters or when we painted and read. The city has never been just anything but an ongoing site of virtuality."[73] However, the digital is still attractive because it offers an added layer of virtuality; "there is a certain safety in entertaining one's fantasies and hopes in cyberspace."[74] Architects thrived from the same kind of freedom when choosing to produce architecture experiments in drawing or writing. The Russian "paper architects" Aleksandr Brodsky and Ilya Utkin etched radical works on plates of copper, illustrating fantastic spaces in contrast to the bleak socialist-realism imposed at the time. Lebbeus Woods performed unconventional projects on paper, creating dystopic worlds. The Archigram group realised most of its avant-garde ideas as drawings. These projects were not intermediaries for a potential construction; they were not representations, rather they exist as worlds in themselves to be inhabited by us through our imagination.

A fluid in its pre-assimilation stage, keeping its heterogeneity. Thus it becomes structure, material, form. Each cell is a detail. There is no perceivable whole; it is only surplus. Excess strives to nourish something new, to receive purpose. However, without contamination from outside, it fades towards homogenization, stabilisation, towards becoming object.

Physically, the assemblage is frozen. Its only capacity is to attract the visitor to touch it by being visually ambiguous and distracting. However, the digital softens architecture, integrating your touch within the existent, making the excess flourish. The nature of your contact, your emotions are the grain of future sprouts. Even without realising, you operate the becoming and unfolding of the room.
Hand and machine craft a new reality.

-coral / probiotic room-

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Architecture has a history of virtual buildings, from Piranesi to Étienne-Louis Boullée and Jean-Jacques Lequeu, to Douglas Darden and John Hejduk. If the way we regard architecture changes with time, and our times are now infused with the digital, architecture should open itself towards the digital spaces we inhabit already. New digital technologies, such as the virtual-reality helmet, expand the territory for more immersive, interactive experiences. The digital is to be inhabited through architecture.

into the virtual, towards a human-centred architecture

Baudrillard asserts we live in the simulacra, in the world of hollow models and no reality. The cause of our malfunction, he suggests, is that we have exhausted our "reserve of the imaginary;" we conquered all territories, and there is nothing more to explore through imagination.[75] However, Deleuze reveals there is more to reality: the continuum of multiplicities called the virtual, from where all the actualizations emerge. Expecting reality to arise from the possible impels the perpetuation of the simulacra, the retention of hyperreality. For Deleuze, the possible is filled with clichés and fetishes. Instead, the world emerges from the intensities produced by the virtual. When we understand the becoming of the world, we recognise the actual as a temporary performance of forces, not as static, universal representations. Architecture —and the human— are effects of intensive processes and, at the same time, potential generators of intensity. Architecture enables the virtual as long as it keeps itself exposed to the outside, to difference. Elizabeth Grosz explains that "outer spaces" are the territories that cross the border of reason, of what is already known, "those spaces occupied by the infant, the psychotic, the computer hacker, the dreamer, and the visionary: cultural outer spaces."[76] Confronted by "outer spaces" architecture expands beyond the measurable, the predictive, providing the human who experiences it a new virtual territory to explore through imagination.

Postmodern architecture confronted itself with the reality of becoming and wished to invent an architecture that can constantly react and adapt to change. Its initial tendencies involved an embrace of 'what already is', of the status quo, in order to validate the discipline and synchronise with the developments of neoliberalism. Popular media, market dynamics, data management reinforced the habit of examining for options inside the possible, playing within the simulacra. In reaction, sustainability reveals the impending crash of the system if it does not disconnect from the loop and open its thinking towards the future. It forces the gaze away from representation into reality, placing architecture back in context. However, digital technologies provoked the most intense recent disruption of the discipline. Taking advantage of computational techniques and the emerging technologies of fabrication, digital architecture redefined the process of creation, integrating all the layers of the building together. With the use of structuring and digital tectonics, architects create complex forms which

perform as assemblages of parts. The digital paradigm includes a rethinking of the detail and the ornament, emanating together in the depths of the folds, textures, curves, patterns, branchings of the structure. The building forms a veritable 'anti-object' softening into the surroundings. Architecture becomes a performance of details, an overflowing of layers and multiplicities. The shortcoming of the paradigm lays in its infatuation with perfection, although the experimentality of the process reveals flexibility and playfulness together with the enabling of difference, which go against dogmatic puritanism.

The digital enabled architecture to open its processes to the virtual, to perform intensities and actualise new structures. However, this shift is still a reverberation inside the discipline. How is architecture operating in response to the digital city growing around it, and to the digitally influenced human inside it? The microchip (the invisible detail), augmented reality, and user testing in virtual reality are some methods implemented to adapt architecture to the human occupying it. Nonetheless, these are implementations occurring in the physical space, not in the midst of the digital. Examining previous works of non-digital virtual architecture, could we rethink the discipline to operate inside the cyberspace? Before we manage to take advantage of the unbounded digital playground and allow it to expose us to virtuality, we first need to learn to think differently about architecture; the rules of the physical do not apply in cyberspace. John Rajchman, revealing Deleuze's propositions from "Difference and Repetition," acknowledges that to begin without preconceptions "is to become some sort of Russian Idiot, giving up the presumptions of common sense, throwing away one's 'hermeneutic compass' and instead trying to turn one's 'idiocy' into the 'idiosyncrasies' of a style of thinking 'in other ways'."[77] As humans, we are predisposed to habits of perception; it is the way in which we learn about the world, constructing from previous experiences. To avoid preconceptions and cliché, architects should understand the dynamic interaction and interdependence humans have with their environment and develop a spatial intuition from their own spatial encounters, instead of relying on data and precedents. In making architecture, humans make themselves; if we want to expose ourselves to the virtual continuum, we need to create an architecture which not only performs the virtual to itself but also mediates it towards us. A human centred architecture which reveals us to the virtual, uncovering our habits, intensifying our differences, to expose the Russian Idiot inside.

In old cultures,
they said that
by sacrificing
a human,
usually a
woman, by
burying her
alive in the
foundations
or walls of
a building
it would be
protected.
A surface
folds and
creates the
capacity to
contain, to
assume an
intimate
space.
Inside the
concrete
folds lies the
unknown, a
domain we
can only
imagine.
Inside the
concrete
folds is the
outer space of
our universe,
which we
can explore
only by
going within
ourselves.

-outside.within room-

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Is this the highest point of reason, to realize that the soil beneath our feet is shifting, to pompously name "interrogation" what is only a persistent state of stupor, to call "research" or "quest" what is only trudging in a circle, to call "Being" that which it never fully is?

Maurice Merleau-Ponty—*The Primacy of Perception, 190*

II

the human

We are human; the reality of our existence is bound to this condition. Our being in the world, or the world passing through us, manifests through the filter of our humanity. Thus the world as we know it is the world of which we are a part. In our becoming we shape the world closer to our perceptions and aspirations. We live surrounded by human-made objects, concepts, categories —junctions between the known, the inside, and the unknown, the outside. Architecture is the archetypical human-made fold, the environment we create for ourselves to inhabit and which in turn comes back to shape us. Contrary to the common perception of architecture as a passive enclosure, the philosopher Elizabeth Grosz defines it "as a moment of becoming, of opening up and proliferation, a passage from one space to another, a space of change, which changes with time."[1] Considering the influence the environment plays in our development, architecture acts as an intermediary enabling our movement toward the virtual. However, in the age of the simulacra, humans, along with their architecture, abandoned the virtual in favour of the concreteness and constancy of the possible. "The body and its environment, rather, produce each other as forms of the hyperreal,"[2] argues Elizabeth Grosz; architecture and humans mirror each other partaking to the scarcity of the simulacra. To re-enable the movement of the real, to reclaim the virtual as the space of emergence, we need to reanalyse the relation between human and environment, between us and architecture. We need to reestablish the flows which generate the forward motion from actualisation to counter-actualisation.

I will approach the analysis of the human from two directions. First, I will examine the movement of the world within us, the path of direct affect things induce on us, from the visibility of objects to the invisible of our perception, through the sensuous instruments of our body. Second, I will explore our elongation toward the world, extending beyond the boundaries of our skin; our ability to simulate and imagine, to access the virtual and unfold its multiplicities. Finally, I will reconsider architecture as the environment of our being, how it shapes our development and the means by which it can enable us a better exposure to the virtual. We need to understand the processes of our being and reveal our limitations and potential, to take responsibility for our future. As the biologist Edward O. Wilson proclaims: "we must look deep within ourselves and decide what we wish to become"[3] and, I add, to decide what architecture we need to lead us there.

the embodied human

The body is the form, material, structure of our presence in the world, the manifestation of our being. It is an island raised in and carved by the environment of its sea. We are embodied creatures; however, our body is not a mere container holding our self and mind, rather a self-defining dough taking shape through frictions with the surroundings. We are not predetermined entities in a body. Instead, we are subjected to the forces of the world through the mechanisms of our physicality, integrated with the indeterminate fluxes of natural and social performances. In "The Embodied Mind: Cognitive Science and Human Experience," Evan Thompson defined our existence as 'enactive' on account of cognition being the result of the intertwinement between body and context. He reveals the body not "as a functional system defined in terms of inputs and outputs," but as "an adaptively autonomous system" capable of restructuring itself in accordance to its experiences, adjusting its perception.[4] Through our body we enact the world, making sense of it and introducing change.

The world passes through us, returning transformed. First, the world affects us, produces an intensity perceived by the body, sparks a charge. Next, we register that intensity, we become conscious of it and connect it to a meaning, surfaced from the vast scheme of associations our body incorporates from previous experiences. Intensity becomes a feeling. Finally, we manifest it outward; we reflect it further to the world. This succession — which is really a single instant, a unitary reaction— is the illustration of the fold performed by us, by our body. I deconstruct this process to understand the mechanisms of affect, of the forces of the world we enact.

In "The Visible and the Invisible," Maurice Merleau-Ponty reveals two aspects of the body, one 'phenomenal,' where the seer that we identify with belongs, and the other one 'objective,' the visible and approachable presence. Although we rather relate our being, our self, with the seer behind the gaze, the two sides co-exist. We are part of the visible, because "he who sees cannot possess the visible unless he is possessed by it, unless he is of it …"[5] Thus in the world we gather, as objects between objects. The chiasm, the convergence between me (the seer, the phenomenal body) and others, starts with a friction, an actualised intensity; with an affect which belongs both to the other and myself, the intertwining of being touched and touching, between the sensible and the sentient body. This friction is the beginning of an unfolding —a pre-personal experience. In this non-conscious intensity, the world reveals to us in truth, in unaltered synergy. The main mechanism that enables our body to be affected is the nervous system, which has the purpose of connecting us to the environment.

The skin defines the boundary of the body. It shapes its visible form, establishes the image of the self. Still, as we cut into the flesh of the body, we find no inside for the self to be in. As Massumi Brian asserts, "the body is radically open," it registers impulses throughout its layers, even without our conscious recognition. "Brain and skin form a resonating vessel" exposing the body as a device for capturing the reverberations of the world.[6] However, the function of our senses is not autonomous and predefined, but it evolves with our experi-

ence of the world. In "The Primacy of Perception," Merleau-Ponty examines the development and adjustment of the senses, relying on Henri Wallon's research on child development. In the beginning, he acknowledges, the recognition of our own body is fragmentary. To such degree that the psychologist and philosopher William Stern suggested "buccal space" to be the extent of the child's world, its boundary of exploration. Progressively, the child challenges the body's limits to learn "the correspondence between the hand which touches and the hand which is touched, between the body as seen and the body as felt by introceptivity."[7] The consciousness of touch does not reduce to the surface of the skin, rather it establishes simultaneously with spatial correlation, with the memory of our body's movement. At the touch of a surface, the hand's motion over it registers the texture, the density, the resistance of the object. The involvement of touch in the deepness of the flesh operates through proprioception, the ability of muscles and ligaments to retain the memory of the contact; "proprioception folds tactility in."[8] At any moment, the body registers its movement, its position in space, connecting it with information from the other senses. Kinesthesis, the consciousness of body movements, also brings forward vision, giving it the information needed to process the spatiality of the optical projection. "It is the movement of our bodies that operates the selection. Every move we make is an existential pressure cooker bringing forth vision from the vacuum,"[9] explains Massumi. Seeing requires clues about the three-dimensionality of space.

Merleau-Ponty contends the body sees by moving around things, thus confirming its place inside the visible; "vision happens among, or is caught in, things."[10] We can rely on vision only after having experienced the tactility of objects, noticing that the visible corresponds to the tactile, that it is cut from the same flesh, "every tactile being in some manner promised to visibility."[11] The tactile performance of sight, the way we gather knowledge about the tactility of things through vision is defined under the Deleuzian term 'haptic'.[12] We have evolved to depend on vision for learning about the world, with its ability to observe elements far away from the circle of our proximity, to recognise colours, patterns, and expressions. But vision only performs jointly with the other senses, resonating together into visceral sensibility. No sense is pure; rather, the 'exteroceptive' senses co-function and synthesise into a singular resonation of the flesh. They meet in mesoperception, or, roughly, sensation.[13]

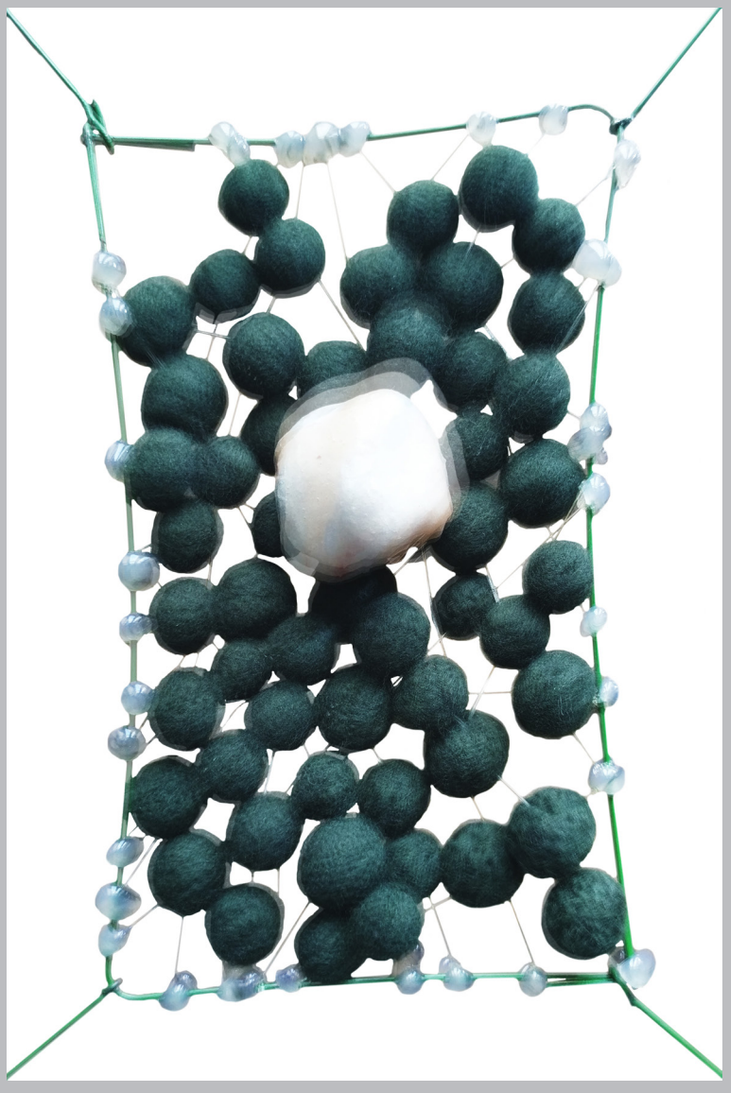
As the pre-conscious sensation intensifies, it passes into consciousness. We become aware of the friction between us and the thing. While affect is a direct and pure registration of the world, it only crosses into consciousness through the filter of our preconceptions. It is not an isolated interplay; rather it emerges as a connection in the layer of my past experiences with the world. The greeness of a fern transcends to us only in correlation with the green of grass, apples, fabrics or feathers. The flesh of the world is a boiling fog of ordinal differences, everything inter-connected. Thus, any feeling inhabiting us is a personal manifestation, a merge between the world we experienced in the past and the world we perform in that instant.

Lebbeus Woods said: “It has long been my contention that light does not reveal the presence of objects, but the other way round: objects reveal the presence of light.” *

Let us transfer this thinking to humans and architecture. Instead of an architecture which is performed by humans, revealing space through their movement, scale, actions, what about one which reveals the body, extending its abilities and emotions. The soft room is elastic and comfortable, receiving the body to shape around it, to reverberate and boost its movements, developing space. It is a space which devotes itself to you, in scale and form, as long as you allow yourself to be part of it, unlearning the reserved manner through which we experience architecture and adopting a power dynamic closer to the intimate relationship we have with furniture.

-soft room-

JO_NAH



* Woods, Lebbeus. “Measuring light.” https://lebbeuswoods.wordpress.com/2012/04/30/measuring-light/ (October 2017)

Further, it reveals that the conventions through which we associate and define objects, the categories we place them in, are associative and emergent; objects do not exist in pure states, in isolation, they depend on our mind to determine and isolate them. The neurobiologist Semir Zeki explains that ideal forms are products of the brain. An ideal "is the brain's stored representation of the essential features of all the couches that it has seen and from which, in its search for constancies, it has already selected those features that are common to all couches."[14] Thus we need experience, formed connections, to appoint characters to objects. In the friction between our body and things, both our bodies and our surroundings coemerge simultaneously.

The body's mechanism for relating with the surrounding, the nervous system, develops, learns to associate and correspond only by employing experience. Semir Zeki depicts the primacy of experience for the development of the body through the evolution of the visual apparatus. He explains that, while our brain is equipped to receive visual information from birth, the 'association' cortex which processes that information and brings it to consciousness develops progressively after birth with the accumulation of visual experience.[15]

> Could a man who was born blind, Molyneux has asked, and who had therefore been forced to acquire knowledge about the world through other senses, and most especially through the sense of touch, ever be able, if vision could be restored to him later in life, to obtain knowledge of the same objects through the visual sense. If such a man could distinguish between, say, a cube and a globe by touch, would he be able, once vision had been restored to him, to distinguish between the two by sight alone. Molyneux, and by extension Locke, thought not. And they were right.[16]

To see the world you need to learn how, to get the body accustomed to its habitat. The brain is equipped to search for constancy, to identify the enduring traits in objects, facilitating categorisation.[17] The way the brain stores information relies on habit, accumulating patterns in a complex system of connections between neurons, which form and strengthen as long as they fire together.[18] The learning process stems from the repetition of sensation, movement, thought. "Habit is an acquired automatic self-regulation."[19] In the world of entropy and variation, we pick elements and incorporate them into patterns; we assume constancy and the stability of objects. Habit is productive, "it always finds more than is really 'out there'."[20] It regulates our selves and the world through us. The strive for finding steadiness, logic, even when it is not there, of believing in the reality of distinct forms and ideas, Deleuze acknowledges as the "dogmatic image of thought."[21] The illusion of truth and stability intermingles reality with its representations. To go against this tendency, Deleuze suggests we adopt an experimental approach to thinking and experiencing, to habitually remind ourselves that concepts and ideas are creations of our body, not discoveries. That they belong to a flexible and augmenting world and need constant readjustment, interpretation, and clarification. [22]

The meanings we assign, the signs we construct, belong neither entirely to ourselves nor the object. But it is us whom the thing passes through, and who create an object of it. So in us is the key to understanding the

nature of reality, by analysing our motivations and perceptions. Merleau-Ponty urges us to reflect, to assume a meta-perspective through which we identify the filter we project the world through. He asserts reflection as the way to retrace our paths and re-center ourselves to reality,[23] to focus on the 'horizon of the world'." For it is the horizon of the world that secretly guides us in our constructions and harbors the truth of the procedures of reflection by which we pretend to reconstitute it."[24] A similar disruption of the cycle of routine to focus on the direct experience of the world lies in the Buddhist tradition of mindfulness practice. Buddhists warn about the constraining tendencies of habits, advancing the concept of karma. Karma represents the patterns we accumulate in our experiences, the historical collection of clichés leading to inert survival and to the perception of ego.[25] It is the boundary we construct for ourselves to feed 'the dogmatic image of our thought.' To liberate, we need to learn to unlearn, to make a habit of reflection and interrogation, to disrupt the karmic causality.

Something affects us, generates a feeling, which in turn projects outward as emotion, forming an action-reaction chain. We return to the world to signify and alter it. "The world is in a condition of constant qualitative growth,"[26] acknowledges Massumi Brian. Without open-reflection and exploration into the unknown – without the emergence of the virtual into the actual– the world only perpetuates inside the hyperreal. Nonetheless, a hyperreal where things still interrelate with each other, where movement happens as long as there is differentiation. As Merleau-Ponty asserts "all flesh, and even that of the world, radiates beyond itself."[27] Humans radiate into the world, create objects and environments, architecture and cities, which in turn radiate back into the human, directing us towards established or obscure territories.

the virtual body

Our body is a paradox. While it sustains the appearance of individuality, of a self in control, it exists only in relation to the world. "The body is hollow. There is nothing inside,"[28] declares Massumi Brian. Its interiority is just the world wrapped upon itself. Therefore sensation is an intensity of the world, stretching from the actual into the virtual, a counter-actualisation. The body is both concrete, in its physical presence with the capacity to affect and be affected, and virtual, through its potential, its vagueness and emergence. It is the threshold where past and future coincide to emanate life. The ambiguity of the body allows it to become other than it is, and to elongate and dissolve its boundary, passing into the things it engages with. Massumi refers to the 'incorporeality' of the body as its virtuality.[29] This is the paradox of the body: an inside incorporating the outside, of which it is a part. "As Bergson said in Les Deux Sources: my body extends unto the stars."[30] What then is this self that I perceive in my thoughts, that I identify with my body? Besides the ambiguity of the boundary of the body, the equation of the self with its presence is precarious. The body fluctuates, changes progressively until it becomes

completely different, from infancy to old age. Massumi urges us to consider the body in movement. "When a body is in motion, it does not coincide with itself. It coincides with its own transition: its own variation."[31] The only definable identity is the thread of ontological variation, the unfolding of potential, the path of transformation. Not the integrity of a self, but this incorporeality, the process of becoming is the reality of the body. Why then is society defined as made of individuals; why do we assume a self? In "The Primacy of Perception," Merleau-Ponty reveals that in the first phase of development, in pre-communication, the child lives without acknowledgement of individuality, of a personal body, partaking to the experiences of "an anonymous collectivity, an undifferentiated group life."[32] This embodied simulation, the projection of myself into another as it would be my own body, is possible through the ability of the brain to simulate experiences. The virtual dwelling of the body of the others through mimesis received recognition and confirmation by the 1990s biological discovery of mirror neurons, which are specialised to reproduce the experiences of the others whom one observes.[33] The architect Harry Francis Mallgrave asserts embodied simulation, or Einfühlung, as a mechanism for grasping the world around us, be it another person or inanimate object, by applying the same structures activated in our direct embodied experiences.[34] Because we own a body, we comprehend the world as made of bodies, which we virtually explore from within. Through empathy we connect to the world, we inhabit it. Embodied simulation, or "the body phantom," as the psychiatrist Paul Schilder described it, is also what enables us to extend our body's capacity with tools, prosthetic devices, implants, to incorporate them into our own mechanism.[35]

The perception of a self, of a body image, emerges from the latent simulation of the bodies of the others, returning upon ourselves through their imagined gaze to encounter a body of our own, an individual. Merleau-Ponty corresponds the beginning of a consciousness of the self-body to the encounter of the mirror, concurrent with the intensification of child's social behaviour.[36] The discovery of one's own body image occurs only after the acknowledgement of the body of the others, since they are visually available for us to explore. As children, we need to relate the image of the others and the world we imagine inside of them, with the way we feel ourselves introceptively and the specular image of our own body. The child has to transpose the image of the mirror from its virtual place and locate it where one feels oneself.[37]

> Schilder observes that, smoking a pipe before a mirror, I feel the sleek, burning surface of the wood not only where my fingers are but also in those ghostlike fingers, those merely visible fingers inside the mirror. The mirror's ghost lies outside my body, and by the same token my own body's "invisibility" can invest the other bodies I see. Hence my body can assume segments derived from the body of another, just as my substance passes into them; man is mirror for man.[38]

The consciousness of a self thus transposes only through others, through the world. The self is not an object, a predefined character; rather it defines an orientation, a self-relation. Mimesis allows the self-appropriation of the gestures of the other, a confrontation with another world.[39] The segregation between myself and

the world around me is never complete. I rejoin the world through my virtual body, exchanging experiences and meanings. We learn to be a self through others, through objects and environments. However, while the awareness of a self-image grants a better understanding of our position in the world, Merleau-Ponty reveals it may produce a possible alienation. We depart from the immediately experienced to become captivated of the imaginary self, the image of our body as seen by the others. We diverge from our presence in the world, from reality, to inhabit a fiction, a constructed self, the super-ego.[40] In neoliberalism, the contraction of the economic subject to the individual, while providing the freedom and flexibility of choosing the groups to belong to, also contributed to the alienation through the super-ego. The neoliberal subject, asserts Douglas Spencer, is "necessarily ignorant, to the imperative that it gives itself over to the trust of processes it cannot, itself, aspire to know or control."[41] Unable to perform any collective project of change, the subject has only oneself to model as a project. In ignorance of a larger context, and without a future trajectory, the neoliberal subject needs to prove the economic value of the self to the market. "Its performance is to be tracked, measured and rated. It is to present itself as flexible, adaptable, communicative and enterprising, to be amenable to working long or unsociable hours, to shifting swiftly between tasks and assignments, to undertaking unpaid work in order to gain experience that potential employers might look upon favourably."[42] In the game of the market, we end up renouncing both world and the ambition of a self, to become slaves of habit, of the simulacrum. However, taking advantage of the freedom of neoliberalism, we can inhabit the fluidity of the self by embracing the differences and contradictions of our environment to bring forward new projects, grasping beyond the individual into the synchronicity of the context. Because although we perform from inside the body, a project of a self limits not to the boundary of our skin, but to that of the world we inhabit with our virtual body.

A more recent alienation through the self-image occurs in the space of the digital, especially by means of digital social media. Inside the unforgetful and intensely public medium of social platforms, the screen provides a far more elaborate picture of the imaginary self we wish to present to the world. In social media, the individual is represented by its profile, which we adjust and construct in full exposure under our gaze. The digital self is measurable, made of information, thus easily comparable with the profile of the others. In contrast to the fragmentary perception we can have upon our body, it is a representation of our self which we can perceive entirely, as from the eyes of the other, getting more entangled in the image of our self. However, cyberspace does not impose in-itself the confinement of the constructed self. The obsession of the ego in social media is rather a consequence of the neoliberalist dependence on the project of the individual. Instead, cyberspace opens us to the fluidity of the self, its ability to assume and inhabit multiple identities. Elizabeth Grosz suggests "the computer and the worlds it generates reveal that the world in which we live, the real world, has always been a space of virtuality."[43]

It is at first an ambiguous cloud of reflective particles. As you move and manipulate it, the particles gather into a specular surface. In it, you notice a vacuum. In the digital habitat, there is no image of your body, no reflection. Rather you are the one who simulates the place within yourself, performing it through the fragments of spatial cognition you gathered in your physical experiences. You are fluid, morphing into every space, form, surface you encounter. Inside the digital, the elements either only are or they reflect themselves at your intention, working towards the creation of space out of nothing else but illusion. The manipulation of light into perpetual motion to loosen the void.
There is no self-image because there is no self in the first place. In Jo_nah you have no choice but to be it, else it ceases to be.

The mirror is yourself.

-reality check room-

JO_NAH

The computer space exposes the rhizomatic structure of reality, the multiple potentials of expansion and the possible cohabitation of difference. Cyberspace is a cluster of virtuality, of unfolded multiplicities, accommodating our perception of reality to new types of materials, interactions, and habitats. Through its impregnation with the virtual, the space of the screen is real, grants us real experiences by means of our virtual body. However, digital space is always an enhancement to the actual residence inhabited by our body, "it's always only augmentational"[44] acknowledges Elizabeth Grosz. In our virtual experiences, either digital, simulations of the possible world of the other, or worlds of our imagination, we never abandon or surpass our body, we are bound to our embodied condition. A digital medium that challenges the captivation for the image of the self as seen by others is virtual reality (VR). In VR, the subject immerses completely in the digital space, becomes a part of it, departing from the idea that the self is represented by the image of the body, focusing instead on the immediate experience. It casts us into another, projected beyond our body, in a mix of imagination, digital simulation, and experiential cognition. It stimulates the body in a similar way a work of literary fiction does, but it also provides an added spatial dimension, making it easier for the brain to simulate the immersion. VR "generates its own exclusive codes, languages, and behaviours. It represents escape from the world at the same time as it makes the world more visible and open to question."[45]

The attraction for the digital is its exposure to the virtual. To embody its potential, we emerge in a self-referential deconstruction of habits, preconceptions, memory, triggered by the uncanniness and unaccountability of the situation, creating new surprising connections. The practice of the virtual body is bound to the memory of past experiences. A future, a becoming is always tied to a past. Memory holds the complex structure of our knowledge of the world, the habits of our cognition. The brain is plastic; it readjusts itself with every encounter, it strengthens old connections or generates fresh ones. Through reflection and thought one can uncover a progression of cognition, "an intelligible becoming of ideas," a history of meanings and relations.[46] One so realises that the ideas we trust, the conditions we presume are only temporary configurations. That through our brain's ability to reconfigure, to imagine and think the unthought we augment the world and expand ourselves to contain it. "To imagine is always to make something absent appear in the present, to give a magical quasi-presence to an object that is not there."[47] Any mindful presence, any reflective experience, includes both a resurface of memories which reference the present encounter, and the obliteration of those references –a recognition of one's preconceptions and the unlearning of them. It is "through encounter with something that shakes up thought, complicates it, recasts it rules,"[48] suggests John Rajchman, that we achieve thinking and the creative process of moving from the actual to the virtual.

The virtual is an imperative dimension of being human, alive. The actual is nothing but the present moment, the affect. What comes after is the exuberance of life, the stretch into the virtual. "Sensation and thought,

at their respective limits as well as in their feedback into each other, are in excess over experience: over the actual."[49] While the virtual cannot be sensed directly, it becomes perceptible in its effects.[50] Both memory and imagination, as functions contributing to the construction of perception, glide into the virtual. Massumi associates imagination with intuition, a means of "feeling through" a process preceding formulation, a "thought only-felt" inviting in the unthought, without a speculation of a final constitution.[51] Memory, suggests Elizabeth Grosz, is a representation of the past enabling the present experience without having any concrete existence in the moment.[52] Memory and imagination, both performing the virtual, orient our being in-between past and future, enabling the progression of an action-reaction circuit of affect. We inhabit the world through becoming, releasing potential events which transform both ourselves and the surroundings. The human is a mechanism for accessing the virtual, processing intensities and actualising multiplicities. On the first page of "Constructions," Rajchman's examination of architecture through Deleuze's philosophy, he writes:

> What if we thus said that at no time can we ever be quite sure what our bodies can yet do, our lives become, the shapes they might assume, the spatial arrangements into which they might enter-if we started from the idea that we are singular indefinite beings, held together, prior to anything like the unified manifold of the Kantian "I think," by informal plans that are always departing from the fixed geometries of our being, opening out onto virtual futures?[53]

We are indeterminate beings, intermingled with others inside the flesh of the world. We perform the virtual because the way of being in the world is becoming. The playful constructions and deconstructions of our lives are mere explorations of reality. A reality which is not contained in one moment, but expands through boundlessness, gathering all the potential assemblages of the actual. In the wilderness of this amorphous world, the only natural act is wonder.

architecture — self mediator

We make things as reactions to the affect the world produces on us, in accord to the mental images of our perceptions. Human-made things and environments are indicators of our function as active subjects, contributing to the becoming of reality. They are unfolded multiplicities we surface from the virtual. Once actualised, human-made objects become part of the visible, returning to us in affect, modulating our perceptions. However, having already passed through the human filter, we connect to them more readily, intimately than to natural things; they are world regulated by the human brain, reciprocating our patterns of thought. Therefore, surrounding ourselves with things of our making, they become the world we inhabit, modulations of reality. The urban environment and architecture, grand gestures of human alteration, are projects through which we wrap ourselves in our understanding of the world, through which we define the trajectories for our becoming. "Thus,

indirectly, and without any clear sense of the nature of his task, in making the city man has remade himself."[54] Creating our habitat, we arrange the frictions of our body with space, the triggers of our memory and imagination, the structure of our thinking, our self. Juhani Pallasmaa reveals a definition of architecture his colleague, the Finnish professor Keijo Petäjä, formulated: "Architecture is constructed mental space."[55] Meaning not only that architecture is a consequence of mental projections, but also that we occupy and simulate its forms as lived from within through our virtual body, that it interpenetrates and extends our mind.

The first contact between the human subject and architecture occurs in affect; our body registers a form it can dwell into. Contrary to the perception that vision is the primary mechanism for reading spatial information, all senses participate in the adaptation, together with the body's memory of movement through space. Moreover, to the direct affect performed on our body contributes the mirroring produced by the virtual body, the reflection of the others who dwell in the same context, and of architecture itself which we anthropomorphise as a kindred object. The stimuli registered by our senses and those simulated by the brain blend to compose the visceral sensation. However, the consciousness of the encounter is not a construction of only sensuous data. The human is an intellectual context architecture has to confront with as spatial experience emerges. The neoliberal aspiration of "aesthetics as pure sensation," argues Douglas Spencer, assumes the lack of a reflective subject, prone to interpretation and judgment.[56] As mentioned before, architecture conveys through the mind, which is shaped by previous experiences. Our habits of thought are "socially and historically produced," as are the objects of our making.[57] Either partaking to or challenging the assumptions of our cognition, architectural experience evolves in the intertwinement of immediate affect and historical knowledge.

Furthermore, spatial experience takes shape when we register a tendency, a tropism of our body in movement, thus a progression of time, a prognosis of a future.[58] Movement is the caressing of architecture by our body, the registration of its rhythms and curves through our proprioceptive senses. We reference our own body's variation to build a cognitive map of the space. For this reason, the "shape of space" is more significant to our ability to orient than visual cues; "the emptier the space," the smoother our identification with it.[59] However, Deleuze argues that for a becoming to emerge from the confrontation of the human with architecture, it needs to pass beyond our self overlapping with space. Architecture must transcend phenomenology, the coinciding of body and world in the "flesh," and intensify, challenge the body with unfolded multiplicities, make sensation "a matter of experimentation."[60] Only then, the self experiencing architecture becomes other from the self before.

Architecture provokes our habits of perception, our preconceptions, to make us experience new sensations, think different ideas. However, things in-themselves have no intrinsic meaning; rather we are the ones who construct connections and signs. "Space is open to how people live it," asserts Elizabeth Grosz.[61] Any imposition architecture entails is actually a confrontation of self with self. While the self is a social, natural, and his-

torical fabrication, so is architecture. Thus its forms and materials connect to certain habits of perception; they activate certain signs and meanings. Although these associations change and are reinterpreted with the passing of time, with the transformation of society, any project keeps a relation to history, to memory. Merleau-Ponty acknowledges the importance of a living history: "Whether we consider our lives as a rupture with the past or as a continuation of it, there is always an internal relation between that which has been, that which is, and that which will be."[62]

An architecture dedicated solely to the past, to its ideas and truths, forgets about "that which will be," and advocates stagnation, bringing forth the alienation of the human through dogmatisation. Difference, contradictions create intensities which question our system of reference and create the possibility of liberation from habits and preconceptions. Farshid Moussavi argues that architecture should afford plural lines of interpretation to address the diversity of cultures, of human beings in the urban environment, and to adapt to their progression throughout time. "Architecture can no longer afford to structure itself as an instrument that either reaffirms or resists a single, static idea of culture."[63] However, involving difference, elements which emerge from outside of our knowledge of the world, the unthought, does not imply a repudiation of history. A project which would hold no connection to a precedent, a pure emergence from the virtual, would be impossible to dwell in, to familiarise with, it would fail at being architecture. It would be alienating because of the inability of the body to adapt to it. Elizabeth Grosz suggests "different cities, different sociocultural environments actively produce the bodies of their inhabitants as particular and distinctive types of bodies, as bodies with particular physiologies, affective lives, and concrete behaviours."[64] The becoming of the body is a process emerging together with its context. Neither architecture nor the self can attain a definitive form. Thus every project is different from a previous, not for getting closer to an ideal, but to maintain the continuity of emergence, to allow the freedom for other projects to exist and be imagined. Every architect (and human) must confront and defy the ideas of its time, must contain in-itself an ongoing project which contradicts and diverges, thus is never completed, leaving a vacuum for others to emerge. Each of us has the claim to the freedom of shaping the own knowledge of the world and the context of our development. Of conducting the trajectories we want for our future. Nevertheless, we meet together in the world and in architecture, influencing each other's paths and experiences. Architects need to converge our interactions towards a cohabitation and folding of differences.

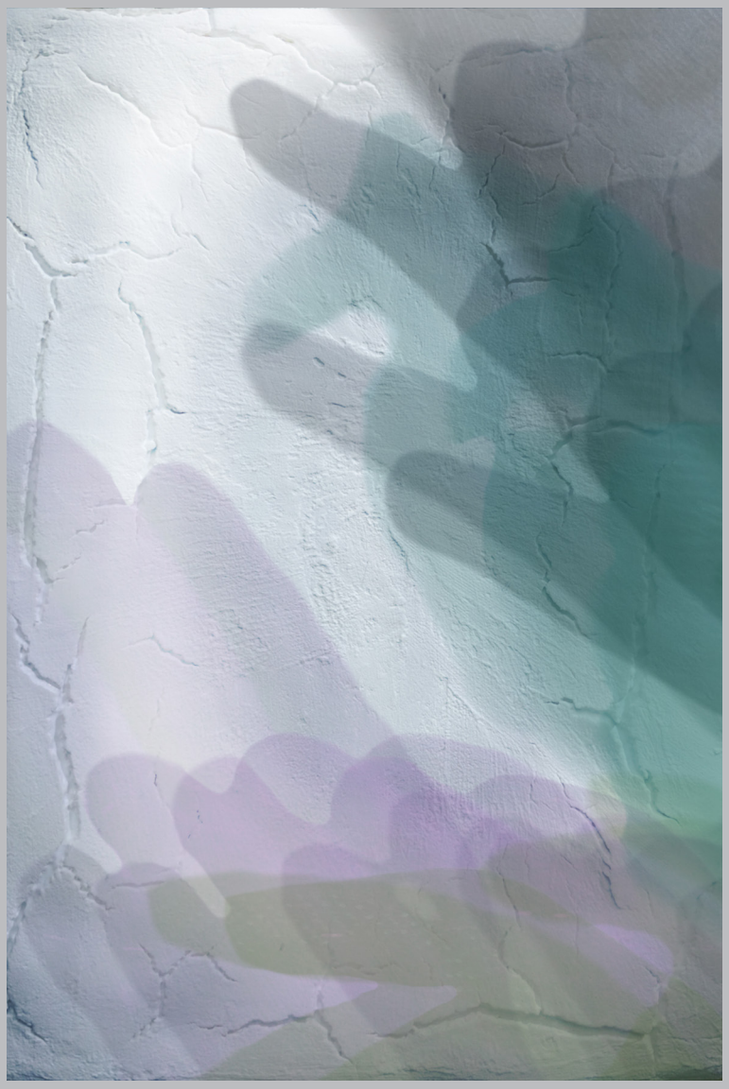
> But this would also be to avow that Western humanism is a humanism in intension: a few are guardians of the treasure of Western culture; the others obey. It would be to admit that Western humanism subordinates factual humanity to a certain idea of man and to the institutions which support this idea, just as the Hegelian state does, and that in the end it has nothing to do with humanism in extension, which admits that there is in each man - not in so far as he is an organism endowed with such and such distinctive characteristics but in so far as he is an existence capable of determining himself and situating himself in the world - a power more precious than his products.[65]

The way you perceive architecture is socially and historically generated. Moreover, the development of your senses happens through your accumulated spatial experiences. In your view, an empty space could never be bare, since you fill it up with what makes you. In time, any space collects the memory of those who have inhabited it. If you could amplify your senses to infinity, you would see the paths of all who have crossed it.

This empty room becomes empty only through the manifestation of that absence. x + -x = 0
Any visitor leaves a trace, a shadow in motion which imprints to the space. After you have entered the room, you will never leave it.

-empty room-

JO_NAH



A human centred architecture is not one which only engages with the concreteness of the body, to its function of survival and comfort, rather it is the one which propels the human into the interrogation of the world, engages oneself in one own's becoming. Juhani Pallasmaa asserts authentic architecture leads to "confrontations, encounters and acts which project and articulate specific embodied and existential meanings."[66] Architecture stops being a terminus, an object for-itself, and becomes the means for confronting ourselves with the unknown, the folded multiplicities of the virtual.

In the process of imagination, of finding new understandings and reinterpreting the architectural space we experience, we are transformed, we become something else. Both self and architecture are reinvented in the encounter. Creating such a project implies both the abnegation of self and the consciousness of experiencing space, and the world. "Just as the body lives between dimensions, designing for it requires operating between logics," contends Massumi. He explains we need to embrace the translogical, to approach the task in contemplation from as many directions we can imagine to, and integrate them together, to supermodulate.[67] Such is what John Rajchman describes as an "architecture of the informe," which goes beyond the grid of the possible, flooding and exceeding it with potential; what Eisenman characterised as "excess."[68] An architecture of excess contains the virtual in the ornament, in the detail, in the superfluous, in the elements which hold no function because one was not yet imagined for them, stimulating us to create connections of our own. The extrafunctional enables the invention of new interactions with space, unusual functions.[69] It deviates from the clichés Deleuze warns us about, which obstruct thought and give us the illusion of unequivocal knowledge. The frontal part of the brain has "an area that monitors the incoming information for any conflict with any previous experience," and attempts to resolve them.[70] An architecture aware of the mechanism of the human, should be an intertwinement of routine and uncanniness, which familiarises with the subject only to decenter the self and stimulate its imagination. We react to the intensities architecture provokes us with; a banal, expected encounter fails to incite us, to affect. A vital, vibrant architecture executes a sensual performance with the human, mystifying the world they belong to, rendering it incomplete.

For the way that we "dwell" on the ground of the Earth is poetic; and our poetry is what always speaks of this dwelling and this Earth.[71]

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A parallel world inhabits the borders of my waking life. This parallel world is one of refuge and passage, quiet places in which to nest and dream, dark places in which to hide and from which to flee. They are the spaces behind, between and through which I enter the larger "rooms" of my daily life. They are spaces in which I am usually alone or on the way to somewhere else: the hall, the stairs, the closet, the attic. These spaces, internal to the house's structure yet external to its principal rooms, are the expanded boundaries of the house and my consciousness. They are condensed spaces, tight spaces, often storage spaces, repositories of the activities and memories just beyond and within the main episodes of my life. Without them, I am uncomfortably fastened to the present, limited to the surface.

Anne Troutman —*Inside Fear , 145*

III

the virtual

The manner in which we inhabit space overflows the functional, the programmatic, occurring more like an invention of place than as the mere registration of the affect induced on the body. We are awakened by intensive stimuli which provoke either the trace of memory or the daze of the uncanny; both extensions over the actual, beyond the concrete, bringing forth new connections. In this chapter, I will examine the relationship between architecture and the virtual. How does architecture stimulate and cultivate our interchange with the nonmetric continuum, with the space of potential? What are the means to both shelter and expose, to engage the habitual and challenge it? To explore the significance of virtuality for a human-centred architecture, I will first review the role of the virtual, its bond with the actual, and the ways we relate to it in the present. Next, I examine architectural projects that operate inside the virtual, at the limit between actualised and imaginary, which use the human as the locus of spatial formation. In the end, I search for the instruments that architecture can employ to maintain its emergence, to provoke and tend to the human living in the digital age.

> It is perhaps obvious to many that to dwell is much more than to live, to survive. To dwell is to populate the world, to build our universe by operating within it, and it is these constructions, whether actions, events, situations, poems, pictures or buildings that leave mnemonic traces within minds and spaces.[1]

The virtual is the condition of potential, embedded in morphogenetic processes, used to explain the consistencies found in the becoming of things.[2] It manifests only in its actualisation; it is unpredictable, indeterminate before its arrival. It is, Massumi Brian expands: "Surprise. Matter boost. In effect, uncaused. Self-creative activity in and of the world."[3] The virtual manifests as a qualitative differentiation of matter, as exuberance over habitual possibilities. Thus a virtuality reveals itself, and revokes its virtual status, as it becomes an actuality. The actual, in turn, counter-actualises intensities that pour into the virtual. The multiple divergent trajectories of nature emerge from this exchange between the virtual and the actual, shaping reality. Contrary to the Bergsonian "possible," the virtual is not waiting to be realised: it is always part of the real, accommodated in the folded multiplicities of reality, sustaining its evolution.[4] Reality, nature—including human nature—is characterised by a constant search of the novel, experimenting with different emergent processes until they become established, habitual. Neil Spiller recognises the same condition of virtual reality in the city, where "The furtive machinery of the imagination and the reality of the city are merely clues to the seldom-seen ballet of possibilities, lusts

and hybridized otherness that lies beneath." Urban heterogeneity is an abundant supply of unknown and unforeseen, shaping the subjectivity of its inhabitants. [5] The virtuality of the real is also present in the nature of time, in the containment of past and future by the actuality of the present. Past and future form a thread, a trajectory which slides through the present moment.[6] Our access to memories and our ability to imagine a future constitute the virtual condition which releases the actual time, the concreteness of the present.

From immediate experience, we can never absolutely determine what is happening outside ourselves. Our body's mechanisms trick us into forming a coherent image, which is really a blend of expectation, imagination, and concrete environmental stimuli. Affect, our openness to the world and the other, is, essentially, a virtual structure. It diverges at stimuli's provocation towards specific chunks of memories, which behave as multiplicities driving the trajectory of the perception. Perception constitutes at "the edge of the virtual,"[7] emerging from the intensities of the conflict between our expectancy and our affect. As long as we are open to the world, to each other in affect, perception is always in the midst of becoming, ongoing, filled with potential.[8]

The virtual links to being human through the creation we perform with our minds as we advance in the world; we construct our environment, and ourselves, in a fusion of concrete and imagined, to maintain the image of coherence. The brain is the main mechanism for adjusting the illusion of consistency, bringing the senses together in synergy, providing the missing pieces to fit the gaps. The brain is thus also the apparatus for tricking the body into believing a virtual model is actually there, for inhabiting a virtual space, an imaginary place.[9] Nevertheless, the virtual is bound to the actual; it is situated and developed out of a concrete event, although it augments it to the point of indistinction. For Deleuze, the purpose of philosophy was to determine the interchange between the actual and the virtual, the means through which they can cultivate each other without losing integrity.[10] "For there to be an optics, for each point in real space, there must be one point and one corresponding in another space, which is the imaginary space. . . ,"[11] acknowledges Jacques Lacan. The actual and the virtual intertwine without blending, building reality.

What, then, is the relation between actual and virtual nowadays? How is the exchange flux between actualisation and counter-actualisation performed in the grand scheme of society? In "Simulacra and Simulation," Jean Baudrillard formulated his disbelief that this flux is even taking place anymore, declaring we are instead partaking to a sort of cyclical perpetuation of the actual, defined as hyperreality. Baudrillard asserts that the collapse of all structure of meaning, the capitulation to a rule of chaos and hazard, leads to a world "which is devastated by difference and by death."[12] The world as a wild realm of difference, where there is no association or bond, implodes into an undifferentiated mass. "It is no longer possible to fabricate the unreal from the real."[13] Baudrillard proclaims the end of counter-actualisation, of the sustenance of the virtual by the actual. Douglas Spencer also identifies the dissolution of society into 'singularities,' separate entities which partake to no

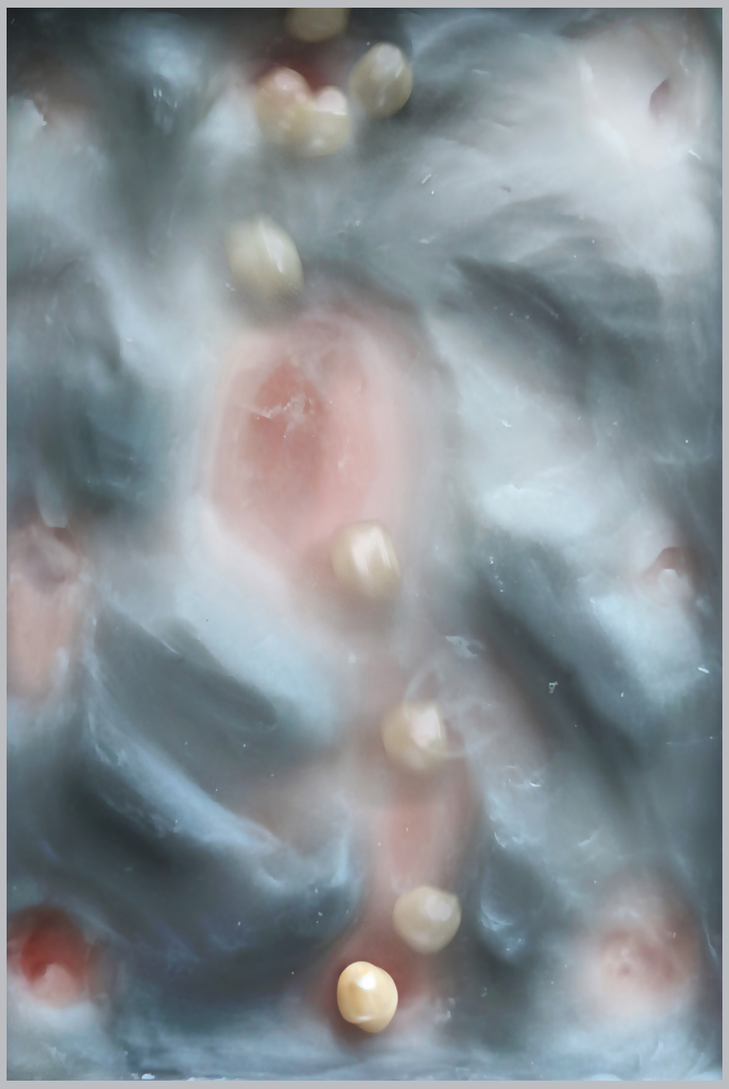
common purpose, in Neoliberalism.[14] Likewise declares Fredric Jameson, asserting that reality has evolved to be "radically heterogeneous."[15] However, he contends diversity and differentiation to be a step forward, towards equality, where all the voices have the freedom to express — "Billions of real people now exist, and not just the millions of your own nation and your own language."[16] Yet, Jameson claims heterogeneities flatten by their assimilation into capital, a totalizing force normalising behaviours into market capacity.[17] Martin Reinhold parallels the standardising character of the market with the late current of globalisation, raising the scale of homogenisation to the globe.[18] In spite of all, Massumi asserts Baudrillard's proclamation as cynical, an extreme view of what happens when the rule of representative order is confronted. He explains that a level of indetermination is essential for order to proceed, "as necessary to it as the fake copy is to the model."[19] Thus, in the wake of the recognition of our differences and fluctuations, we need also to identify the structures that keep us connected, the mechanisms of familiarisation and recurrence, which are the elements we will continue to provoke through the intensities of our differences, sustaining the becoming of reality.

Such unifying force is cyberspace, which fluidises space and bodies, activating them to perform in simultaneity. While the digital network exploits our habits and predispositions, it also facilitates our exposure to heterogeneity and emergence, providing a diverse, adjustable and decentralised structure. John Frazer determines cyberspace as "the exact opposite of architecture of our current cities," which calls into question the future evolution of architecture. He further points out that the lessening of social formations, such as the nation-state, through intensive global networking was recently countered by a rise of nationalism, signalling a crisis of identity linked to unfulfilled needs.[20] What should be the path of development for architecture to counteract the current environment? Virilio Paul contends that architecture's appeal to technology only made it more introverted, "a museum of sciences and technologies," leaving the radical 'conquest of space' to outer space engineering.[21] What architecture lacks is the operation of memory, temporality, an unworkable task when trying to address masses, a flattened representation of the heterotopias of society and nature. To arouse the sense of history, of time passing, Fredric Jameson proposes Utopic vision to be the only way to challenge the protection of the status-quo and to restore the thinking of unforeseen futures.[22] However, the creation of new, surprising scenarios can only take place with the incorporation of exterior forces, with the involvement of marginal others, spaces, people, ideas, which develop exterior to the norm. The new Utopian vision has the ability to mediate the human condition and stimulate it towards fresh ideas. It is a way of thinking that articulates chaos and order together.

The physical layer of the place continually grounds the digital as a spatial reality. It provides the intimacy of touch, the connection with the concreteness of the body, while the digital advances the morphogenetic dimension. Physical and digital resonate together to create the unexpected. However, as the place is visited time and again, its experience becomes habitual, predictable. When space fails to produce an intensity, to generate affect, to provoke, it loses its purpose.

The central room, the one through which the place is initiated, is the one which is closest attached to the physical reality. Its space is defined by the horizontal boundary, the floor, the support for the movement within.
As the place gets frequented, the floor begins to bear the trace of the weight and movement it has borne. In time, frictions deepen the surface to emerge as landscape. The physical endures the consequences of usage, while the digital flourishes.
The two dimensions depart from each other, differentiating, avoiding the illusion of a permanent condition.

-stray room-



virtual architecture

Architectural creation always brings forth a virtuality; it invariably implies the use of imagination to generate change in the fabric of the actual. It impregnates a place with something outside itself, a difference, introducing a moment of intensity and potential. Dwelling in architecture is always soaked in exchanges with the virtual. As Anne Troutman conveys: "I do not believe the house is a safe place."[23] The house is a space we inhabit through the constructions of our mind and our virtual body, in as much as it is a shelter for the actual body; it holds the projections of our habits, dreams, and fears. What I mean, however, by virtual architecture relates not to the implicit virtual penetrations in the built environment, but to an architecture located strictly in the virtual. Virtual architecture is a place which can be inhabited as space only through imagination, which uses the human as the site for passing into the actual, to become livable through one's mind and virtual body. It is embodied in projects which pass time vertically, bring it "out of joint," presenting a "virtual future" that already happens without actually being. John Rajchman expresses the critical role of "invisible cities," since they diverge us from the expected.[24] Virtual architecture is situated at the boundary of the discipline, using some other medium to host its existence: drawing, writing, theatre, cinema, cyberspace. It is a new form of Utopia, which presents a virtual time without implying the possibility of an ideal good; it only cultivates the potential of Utopia, using it to uncover, respond, and provoke the human condition.

The Russian architects Alexander Brodsky and Ilya Utkin worked together between 1982-1993 to create etchings of visionary architecture projects. Their work emerged as a reaction to the utilitarianism of the communist regime, which used architecture as a form of propaganda and control. Brodsky and Utkin are explorers, inventing ways to uncover human nature against 'the correct' subject of the Soviet Union. In their view, acknowledges Lois Nesbitt, architecture has "to address the human condition in all its psychological and social dimensions, and not merely to provide shelter for physical bodies."[25] Their purpose was to save the moribund modern city from its fate through "imaginative transformation." Brodsky and Utkin practice a hybrid form of architecture. Taking from illustrated story-books. they employed text and drawings to construct their visionary places. They also extracted from the character of theatre to generate "a context for the viewer to glimpse architecture as life."[26] Through their dream scenarios, the Russian architects revealed the multiplicity of the human condition, with its incoherences and divergences.

Our theatre has no permanent stage: in its endless voyaging about the city it stops in the most unexpected places, the curtain rises in search of new spectacles, new set designs, new actors.[27] [Stageless Theatre]

In "Bridge," the architects designed a glass chapel placed over "the fathomless / endless crack." The bridge spans "between two abysses — upper / and lower."[28] It exposes an unexplored connection whitin the human, the vertical; two abysses at the middle of which it lies. "There is weightless flight only when 'there is

no above, no below!'," says John Rajchman.[29] Although there is void in both directions, the human remains the centre of its space. The middle is oneself, which means that there is really no above or below outside the human reference. Another exploration of the verticality of the human condition is "Villa Nautilus," a representation of the dual nature of the hermit, the inherent complexity the human is capable of. "Dedicated to those / who alone on small boats / cross the oceans. . ."[30] In the same house/ body/ ship, there are two layers of character: the insurgent, confronting the world, and the solitaire, hiding in its intimacy. The house of the hermit is the expression of its nature, of its mental territory.

In "Forum de Mille Veritatis," Brodsky & Utkin embody the attributes of Knowledge and the human pursuit of truth. The Forum is a collection of human knowledge written on tiny pieces of paper, posted on crowded columns. Each column is dominated by the statue of a person on top, the representant of a paradigm. From the plan we see that the Forum is not complete; new pillars of knowledge can be added. Truth is scattered between all the sheets of paper; impossible to embrace it completely, it is, moreover, corrupted by lies as it is expressed by people. "The Real information can't be bought. It is accessible to those who can watch, listen, think."[31] At best, the visitor might find its own truth in the Forum. In "Crystal Palace," Brodsky & Utkin employ architecture as a mechanism for looking beyond. The Palace is a bait, a Mirage attracting a visitor to the edge of the city, of the perceptible. Once it passes through the glass plates, the visitor is exposed to the onset of Landscape. Architecture is nothing in-itself, rather it provokes to look outside. "A Mirage remains simply a Mirage, though it can be touched."[32]

Another project which employs the human inclination to explore and gather knowledge of the world is Lebbeus Woods's Solohouse. The house is designed to be occupied by only one person, a reflection of one own's journey. The architecture is incomplete; the architect presents just a shell, a structure to inhabit and develop upon. "The function is ambiguity itself," says Woods.[33] It connects to Deleuze's examination of the "lived brain," which does not work programmatically, but creates unexpected connections, establishing the human as an indeterminate being. [34] Reciprocating our volatile nature, Woods created the house to be a "freespace;" the occupant needs to colonise it, to "invent the way to inhabit" it.[35] Solohouse is fit for 'watching, listening, thinking,' what Brodsky&Utkin asserted to be the path to real knowledge. The house as an apparatus for self-invention pertains to the reminiscence of the original habitat: the uterus. Tristan Tzara, founder of the Dada movement, believed "well-being resides in the clair-obscur of the tactile and soft depths of the only hygiene possible, that of prenatal desires," enclosed by irregular, wombic houses, "from the time of the caves to the cradle and the grave."[36] Such space was vastly explored by Frederick Kiesler, in a more than twenty years investigation of the Endless House. He experimented with variations of continuous space, playing with soft forms, light, digital projections, abundant materials to create a dynamic space that accommodates physical and psychological freedom.[37]

Our body is very skilled at defining limits, boundaries, enclosures. It is so wired to interpret the world in this terms that it often

When your mind sets to distinguish a border, it builds your reality around it, strengthening the trust that there is no way

From the distance, the elements seem to form a continuous surface, a wall. Although it allows you to see behind, your mind still

However, if you dare go against assumptions, you discover

You can only cross the limit once you understand there was

-frivolous limits room-

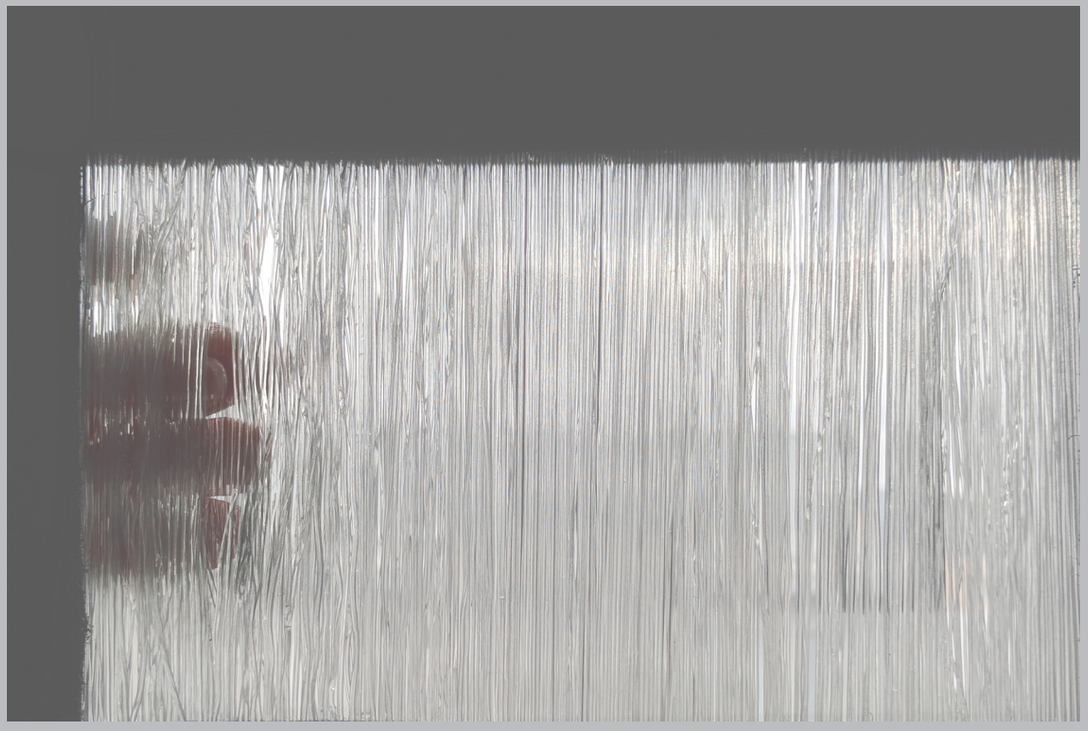
fails to perceive the interconnected nature of reality, the access for proceeding beyond.

you could pass on the other side, or that there might not be another side in the first place.

perceives it as a limit since your body, your physical presence, could not cross it.

a new reality.

no limit all along.



Beyond the rejoicing of the latent potential of the womb and the celebration of our capacity to shape reality, lies the ephemerality of our being. Douglas Darden embodies the impermanence of humans in the Oxygen House. Peter Schneider, friend of the architect, describes it: "Within the compelling idea of the first house — the house at the beginning of time — is buried the equally compelling image of its shadow: the house at the end of time. This is a place for dying in." [38] Darden builds a house based the narrative of an imaginary character Burden Abraham, and his nurse Jewel, whose function is to accommodate the waiting of death. In the end, any house for living is moreover a house for dying, albeit death is always virtual.

The interiority of a house, as long as it retains the duality of inside/ outside, is associated with caves, graves, women, Juri Lotman contends, and the movement in-between interior and exterior has the overtone of death and birth. [39] The juxtaposition between human and architecture intensifies through our practice of anthropomorphising architectural events, of simulating them from within.[40] John Hejduk poetically evokes this relation in "Sentences on the house and other sentences." He chronicles the unseen spirit of the house by taking the empathetic relation between house and human to the verge of overlapping. "A house is born, lives, and dies and is named house."[41] The vital breath of the house is preserved by its inhabitants, without which the house turns into "vacant space."[42]

When it comes to its character and spirit, the house is the analogue of the woman, born out of her,[43] and longing for unattended intimacy with her.[44] In Hejduk's poetic spirit, the alliance of the female with the domestic space is so intense that she becomes the house herself: "A woman unfolds as a house of many rooms."[45] The association is understandable since it partakes to the safety, comfort, affection of the maternal space. Through attachment to this memory, Luce Irigaray contends the woman has been delegated as the 'container' of man's identity, his place of reference, as an existence for another.[46] This imposed on women a masque, a role to embrace: to become an "infrastructure" of domesticity for society. "In this masquerade of femininity, the woman loses herself, and loses herself by playing on her femininity."[47]

Modern architecture carried out a liberation of the woman from the domestic by employing a 'castration' of the house, a machinisation of its rituals. However, it also managed to generate a critique of the feminine by proclaiming all the attributes of space associated with it to be dispensable: the ornamental, formless, soft, excessive, emotional. Hejduk contends: "A forlorn house is a house without a woman."[48] The characteristics attributed to the maternal-feminine engage the indeterminacy and creativity of the human condition. Instead of dismissing them, we rather need to discard the duality of masculine-feminine, recognising the multiple forces at play inside architecture and life. Although projects of Late Modernism and Expressionism, like Le Corbusier's Ronchamp Chapel and Bruno Taut's Glass Pavilion, notably employed the sensual, the emotional, the contemporary risk-appalling approaches, focusing on the measurable, the marketable, the programmatic ignore the

complex nature of the human and its quest for knowledge.

Moreover, the traditional reading of the domestic as formed by female and male participation has been hijacked, beyond the recognition of other forms of sexual orientation, by technology. Since the introduction of the radio, and even more with additional uninterrupted types of communication technologies like telephone, TV, internet, the home "opens wide its codings to high - volume and highly random passage, of signs if not of human bodies."[49] The domestic is now infiltrated at all times by foreign forces, interchanging at our intention between public, private, or intimate through the space of the screen. The human of fixed identity, conforming to an established social role is no more. We are the ludic humans, the descendants of our "human ancestors engaged in laughing, singing, and dancing around a fire as early as a million years ago,"[50] with a compound nature and multiple layers, whom architecture needs find ways to engage.

Advanced technologies are transforming society and cities into a universe of relationships. Nic Clear imagines the future of the city following the impending 'singularity'. The Gold Mine establishes on a time of "nanotechnological ubiquity, of hive-mind artificial intelligences, everything sentient in a way: wearable computing, genetic manipulation, virtual and augmented reality everywhere, seamless prosthetic augmentation of the body and boundless potential for creative problem-solving in a world on infinite resources and political conviviality — a society built on mutual benefit,"[51] describes Neil Spiller. In this world of abundance, the city is continually altered and augmented; everything and everyone can take the role of the architect. While Artificial Intelligence (AI) takes care of structures and logistics, the ludic inhabitants, liberated from the 'tyranny' of work, are free to experiment with their habitat. Using virtual and interactive interfaces, they can test and explore their conceptions before applying them. The Golden Mine is scattered with Virtual Reality (VR) and Augmented Reality (AR) spaces and elements, "and sometimes it is possible to differentiate between these and actual space."[52] Through this project. Nic Clear aspires to start a debate about alternative futures, to defy assumptions, and imagine the ways technology will transform the human.

One of the most challenging ideas is the integration of immersive digital simulations as urban spaces, places which exist solely in Virtual Reality partaking to the network of the city. If the space of the screen made locations inter-changeable, VR would add a new spatial dimension, employing the temporality and intensities of the city, and the imagination of the inhabitants. While expanding the potential of differentiation of the urban places, VR is also limited by the concrete, by the physical structure of the city and by the body of the user. To think about VR as a disembodied medium is a mistake. "There is always an excess of the analog over the digital,"[53] acknowledges Massumi Brian. The analogue is a referent, an infrastructure where the contorted exchange between the actual and the virtual takes place. VR is just a layer, working to provoke the intensities needed to maintain the crossing.

You are the world folded
in itself, a transitory force
operating reality, an intensifi-
cation of the flesh. Still, you grasp
things from the centrality of your humanity, you
read it through the filter of your body. The world, for
you, is human. Its movements are the movements of a
body, its frictions are the frictions of a skin, its behav-
iour is the production of emotion. The world is affected
the way we are affected. Living in the midst of things is
engaging in empathy. We can only understand through
ourselves. The surfaces of this room expose and height-
en the carnal affair we have with our
habitat. To make architecture more
emotional, more reactive to the
human affect, it means to
create a biological,
living habitat,
which is born
and dies, which
thrives from
touch and decays
in isolation. It sur-
renders to your
humanity.

-nude room-

JO_NAH

The body in VR takes the role of the body of the nomad. The nomad perceives oneself to be the middle, the origin, "the only fixed point in the universe," explains Lars Spuybroek. Through moving, walking, the nomad appends space to the body as a prosthesis, becoming one with it.[54] This view of the relation between body and space is close to the reality of our's body reception of its own movement through proprioception. The body is able to integrate elements through its inner phantom, its constituted intuition, and assimilate their proprieties as its own. In VR, the container of subjectivity is the point of view (pov), which concentrates the projection in the VR helmet, counting on the body phantom to construct the spatial immersion.[55] We control and immerse ourselves in VR using our body, through its motions and intuition. However, the experience engages us in a dissolution between our direct experience and the image of our body. We are absorbed in a self-constructing event, where at each moment we need to confirm our identity. Sound enhances the immersion, making the self and environment resonate together. "Immersed in sound, the subject thus loses its self."[56] More than the other mediums for virtual architecture— drawing, cinema, text, etc.—VR takes us inside the picture and makes us be it. The potential of VR architecture stands in its capacity to colonise the human and confront one's expectations, assuming the role of the mirage which helps you look beyond. Plus, virtual architecture is always human centred since it can only live through the human.

architecture for the virtual

Advanced technologies, cyberspace, the complex web of communication of which we are all part transfigures our habits of perceiving the world. John Frazer describes the emerging paradigm "as decentralised, desynchronised, diverse, simultaneous, anarchic, customerised… Key concepts are information, sustainability, participation, emergent properties…"[57] Our bodies accommodate technology, assimilating its capacities, while also limiting it based on our abilities to adapt and imagine. Computer systems contribute now to the construction of our subjectivity, playing of the fluidity and emergence of our self, transgressing the barrier "of the historical masculine conception of the intact and solvable 'I'."[58] How is architecture shaping in reaction to the new human condition? According to Juhani Pallasmaa, "The task of architecture is not to beautify life, but to reinforce and reveal its existential essence, beauty and enigma."[59] Thus architecture should not infatuate on order and restraint but on life, on becoming, and the unknown. Neil Spiller acknowledges "new bodies demand new environments in which to dwell," but moreover, in Salvador Dali's words, "to dream in, and even to rave in."60 The digital affords architecture increased means to accommodate the intensities of life, dissociating design from matter and enhancing the sentiency of our bodies with new forms of materiality. However, architecture possesses its own mechanisms for extending into the virtual, using folds, complexity, and memory to partake to our

emergence. Any inhabitation is foremost placed within the physical, defining the space our body occupies and establishing our frame of reference for spatial cognition .

> I imagine I am constructed of the various dwellings I have lived in over the years; I visit aspects of my ideal house here and there, the amalgamation of all my memories, fantasies, and conscious and unconscious associations. Their interiors hold me and record different stages of my emergence as a person. To remember, to describe, to daydream about these spaces is one way I have a feeling whole, of grasping parts of myself that might otherwise be lost. The dwelling is a trust of my known and unknown selves.[61]

The complicitous nature of the house towards known and unknown aspects of subjectivity is a manifestation of the fold in architecture. The concept of the fold develops from Deleuze's description of a multiplicity, explaining that: "The multiple is not only what has many parts, but what is folded in many ways."[62] The state of the virtual is that of the absolutely folded, in every direction and way; thus an actualisation is a temporary unfolding of its continuum. In "Architectural Curvilinearity: The Folded, the Pliant and the Supple," Greg Lynn clarifies folding from an architectural perspective. He compares it to the geological processes of sedimentation, compaction and bending.[63] Folding is "a supple layering," where separate elements are integrated together without losing their capacity to differentiate. In a fold there is no pre-established unity; the components are joined by an external force, forming a 'smooth' aggregate with "continuous variation."[64]

Compliancy in architecture is a case of being "formally folded, pliant and supple" to abide by the forces of the context. It is a form of resistance to the intensities of the site with minimal means, by internalising them into a flexible organisation. The intensive connections do not comprise a whole, conclusive system; rather they are an indeterminate active apparatus inviting external forces within. The folded thus creates 'viscous space,' to which outside elements tend to stick and integrate into. The system of relationships thus developed smooths space, building a "continuous yet differentiated" arrangement able to adapt and readjust.[65] Deleuze and Guattari describe 'smooth space' as 'nomadic' since it provides, in Douglas Spencer's words, "a realm of invention, difference and becoming through which the subject might drift."[66] Folding creates an adaptive, continually emerging urban fabric, which makes use of the potential inherent in the differentiations between the components of the city.[67] "A multitude of 'pli' based words — folded, pliant, supple, flexible, plaited, pleated, plicating, complicitous, compliant, complaisant, complicated, complex and multiplicitous to name a few — can be invoked to describe this emerging urban sensibility of intensive connections."[68] Variations of the fold avoid uniformisation and preserve the intensive differences of the context; consequently, they allow the virtual to manifest and other configurations to emerge.

'Perplications,' cross-foldings, or 'perplexing plications', involve a complexifying of the folding, a further divergence of the forces integrated into the assemblage to create unforeseen complex, multiple connections.[69] Charles Jencks formulates a definition of complexity:

Let us consider space as the expression of the home in its substance, an architecture of the personal world. In this sense, connecting concept to form, space take the shape of a literal fold. The space which surrounds us most intimately, the surfaces which we keep closest to our body, are the warm, soft, fluid creases of fabric we dress with, cover with, sit and step on. The space which nurtures and comforts our being is a textile fold. It welcomes the bendings of your body, allowing you to either expose or conceal. In its hidden pockets lies the temporality of your self, with your dark memories and secluded perceptions. It is a room which holds the evidence of your becoming, in the comfort of your own institution.
A mechanism for accumulating and obscuring memory.

-tuck me in room-

JO_NAH

Complexity is the theory of how emergent organisation may be achieved by interacting components pushed far from equilibrium (by increasing energy, matter or information) to the threshold between order and chaos. This important border or threshold is where the system often jumps, bifurcates or creatively interacts in a new nonlinear, unpredictable way (the Eureka moment) and where the new organisation may be sustained through feedback and continuous input of energy.
In this process quality emerges spontaneously as self-organisation, meaning, value, openness, fractal patterns, attractor formations and (often) increasing complexity (a greater degree of freedom).[70]

In other words, complexity is the positioning of an assemblage at the edge between virtual and actual, through the instigation of "a cascade of broken symmetries." DeLanda describes this process as a progressive differentiation inside the continuous smooth space, generating extensive, concrete structures.[71] Such an emerging assemblages should be engaged topologically, advises Massumi Brian, "by their virtual centres," allowing them to transform and vary.[72] Topological design is morphogenetic, it forms and evolves as part of its context as long as its vital energy lasts, as long as its intrinsic differences exist and communicate.[73] The geometries it forms are indeterminate, intuitive, informal. Greg Lynn, in reference to Edmund Husserl, defines them as anexact geometries, which, although they can be precisely described, are bound to the context they formed into and irreducible to averages.[74] While Post-Modernism and Deconstructivism engaged the external forces of the site through contrast, employing a new differentiation that, however, does not bifurcate in self-emerging retaliation, topological architecture interacts with those forces "by knotting, twisting, bending and folding them within form."[75] Topological approaches generate more emotional and intuitive geometries, which stimulate the human affect.

The human is a perplication in itself; we integrate the life around us, things, matter and compel it to evolve into something more, to become us. A virtual construction, asserts John Rajchman, allows the rules that govern it to be altered; it does not grasp on already determined configurations.[76] So does the brain when responding to something which confronts its previously stored knowledge; fascinated, it proceeds to imagine, to create a new reality from which that uncanniness is a part.[77] We strive on mishaps in our habitual perception, diverging and diversifying our subjectivity and our awareness of the world. Such is the role of poetry or metaphor in architecture, to take the barrenness of a language and discover new meanings, to take it "to the point of sobriety."[78] An architecture for the virtual involves the creation of the ineffable, befitting child's open way of inhabiting space, with an awareness which always goes beyond the perceived, into imagination, dreams, fantasies. It tests our limits, consumes our anxieties to encounter the outside, the unknown. Architecture settles the human at the lip of the virtual to unfold the real.

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conclusion

We started by questioning the nature of reality to identify the correspondence between the world as we employ it and the world as it is in truth. Thus we found ourselves to be performers of our environment, active subjects capable of influencing the becoming of things. Breaking the copy mould, we recognise everything has a precedent, yet there is no original, each copy is an augmentation over the existing. There are, however, interconnected fields of difference, matter in the process of becoming, which sometimes settles into a temporary equilibrium. When two differences communicate, or symmetry is broken, it creates an intensity, a portal of exchange between the actual and the virtual. As architects we work inside these strata, either homogenising them, normalising and standardising the differences within to stagnate the movements of reality, or engaging them in interactive plays allowing unexpected configurations to emerge. Either way, the canvas is never blank, we always perform within a context, which is itself conjoined within the extensive fabric of the 'flesh of the world'. The task of the architect is to define the forces most likely to collaborate and emanate into expanded versions of reality, apprehending the heterogeneity of the elements involved. It is to engage and disturb established configurations, energising the becoming of things as part of the project.

Since the world is composed of dynamic, incoherent fragments, we should not push the discipline into a set of rules, a book of recipes. Each architect will define their own architecture, based on their filter of previous spatial experiences and memories. However, each creation implies the confrontation of the self with the outside forces of the site. Thus any project is a unique event, a peculiar assemblage of parts engaged. A coherent practice is one that disregards the intertwined nature of our being in the world. Architecture is still a realm where people meet, a spatial language which converges one with the other. It is a backdrop for life allowing humans and other forces to express and communicate. The populism of the market facilitated the perpetuation of fetishes, of easy digestible tricks that only favour the already established. Rather than being a product we need to sell, architecture needs to sustain life in all forms, to encourage the expression of the different other so that we can continuously interrogate and reflect on our knowledge. The recent developments in digital technologies reveal a tendency towards the loosening of the bridge between humans and their habitat. From the prognosis of tools that will shrink the path from thinking to producing, to environments that react directly to user's movement and emotion, architecture is unfolding into an apparatus of human expression. In a culture increasingly infused by the digital, each person will have the tools to create and modify their environment. Each detail will be the container of difference, of a gesture or a force, integrated into an imperfect and ambiguous assemblage. Architecture will live because it will be animated, overflowing, with parts which atrophy and parts which emerge, a source for the poetry of life.

In a world of constant fluxes and changes, we are wired to find constancy, aspiring for concrete knowledge. Thus to survive, we regularly need to readjust, to interrogate, to unlearn our assumptions. Since the expe-

rience of space always passes through the filter of our self, of our previous experiences and memories, architecture has the ability to provoke within us the unfamiliar, to generate the intensities for becoming. As beings, we are undefined, turned towards the world to be affected and express emotions, continually underway to develop our senses, our cognition, our body. If architecture only offers a habitat of comfort, of the predictable and expected, it keeps us stagnant, reinforcing the illusion of pre-defined truths and the misconception of the isolated self, the ego. From time to time, we need to be confronted with outside forces which keep us at the edge between the actual and the virtual, in constant interrogation. When we are attentive, present in our direct experience and depart from the image of the imagined self, we encounter unusual perspectives and unexplored territories, simulating the sense of things and others through our virtual body. A habitat which leaves itself exposed, avoiding its establishment into an object, enables the body to pass into it, to elongate and explore the fluidity of the self. Digitally impregnated mediums such as virtual reality depart us even further from the superego, casting out the image of the body to only keep the truth of affect and the filter of spatial memory. Our perception of space passes through the layer of our socially developed understandings and our accumulated spatial experiences. Thus the way we inhabit architecture is influenced by interactions outside the built environment, through spaces we occupy through our virtual body, in books, drawings, films, or the digital. The invasion of architecture towards the digital through AR or VR creates a broader awareness of the relationship between humans and their habitat while blurring the boundary between creation and usage. The digital also provides a territory for sustainable experimentation, for extra-functional projects which challenge our expectations and adopt our reactions. Digital architecture will articulate a parallel world of the uncanny and imaginary, a nomadic habitat which we can access and share online.

Nonetheless, our physical habitat needs to partake to our becoming, to correspond to the heterogeneity of the world and the fluidity of our being. Architecture should be a play between living on the edge and living in the middle, articulating chaos and order. It should identify the forces which bring us together, our history, memories, habits, environments, and perform from within to invite the outside. It should value whatever differences are left between us, to include the neglected others and emerge into new ideas, unexpected trajectories. And when there is no outside to comprehend, architecture will operate to create it from its own imaginative, indeterminate, incomplete nature. When safety, comfort is the energy needed to redeem some order from chaos, we can explore the edge of the outside voluntarily, through virtual architecture. Exploiting the visceral connection we hold with our habitat, architects should create environments that uncover the complexity of the human condition, that help us reflect on ourselves and on the knowledge we possess of the world, to invent ways of living fully.

With the impact of cyberspace, the tendency is towards adaptable, encompassing, flexible, emergent

spaces. From creation to operation, architecture is and will increasingly become more of a hybrid between digital and physical. The role of the architect is to manage the forces partaking to the context, to identify and integrate them to avoid their assimilation, enabling evolution, invention. It is to perplicate diversity so that each user can invent their own path while still participating to the whole. In the era of big data and risk-analysis, what are the means to accommodate information without relying on it as absolute realities? What are the methods the architect should employ to recognise the dynamic and static energies of the context, to empower difference and invigorate the stagnant? Moreover, how can architecture maintain the flux between the actual and the virtual, keeping itself sustainable? If humans have an active role in the creation of their habitat, with the aid of digital technologies and flexible spaces, the ephemerality and temporality of living, together with the inclination towards habit and normalisation, will become a part of the environment. Thus the task of the architect is to instigate the unexpected, to exacerbate life. Therefore the essential question is how can architecture as a discipline keep itself exposed, at the edge?

Virtual architecture is a site for the safe nomad.

While it exists through you and moves with you it is still a

confined experience, bound by the medium it embodies.

Jo_nah is a site for practising nomadism, for warming up

your spatial fluidity and awareness, provoking you to draw

architecture nearer to your body, to acknowledge your

impact as an active presence in the world, to imagine and

create, to approach the virtual.

-confined nomadism-

JO_NAH

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"Do not overwhelm then he
who wants to take his part
of the risks of life — Let
the metals fuse
tolerate the alchemists who
besides leave you outside
the cause."
Le Corbusier — *5D Fusion (Red)* ,
Le Poeme de l'angle droit

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